DOCUMENT RESUME

ED 343 703 PS 020 429

TITLE Colorado Sample Outcomes and Proficiencies for Elementary, Middle and High School Education.
INSTITUTION Colorado State Dept. of Education, Denver. Office of Educational Services.
PUB DATE Dec 91
NOTE 363p.
PUB TYPE Guides - Classroom Use - Teaching Guides (For Teacher) (052)

EDRS PRICE MF01/PC15 Plus Postage.
DESCRIPTORS *Academic Standards; *Curriculum Development; Dance Education; *Educational Objectives; *Educational Planning; Elementary Secondary Education; Health Education; Language Arts; Mathematics; Music; Physical Education; Science Education; Second Language Learning; Social Studies; *Student Evaluation; Theater Arts; Visual Arts; Vocational Education
IDENTIFIERS *Colorado

ABSTRACT

This document contains materials describing outcomes and proficiencies for grades 4, 8, and 12. The materials are to be used by Colorado school districts in developing a standards- and outcomes-based approach to curriculum, instruction, and assessment. The outcomes and proficiencies considered bridge traditional departmentalized curriculum and the emerging interdisciplinary curriculum. Outcomes and proficiencies are based on assumptions about the value of: (1) an emphasis on both content and process; (2) an appreciation of diversity in a democratic society; (3) students' unique backgrounds; and (4) student learning about people of many racial, ethnic, and cultural groups. Materials address the educational content areas of dance; education technology; English and language arts; health education; mathematics; music; physical education; science; second language instruction; social studies; theater; visual art; and vocational education. Materials for each content area relate learner outcomes, content standards, and assessment of student learning to the categories of: (1) aesthetic development; (2) career development; (3) communication; (4) human relations and responsibility; (5) multicultural understanding; (6) physical and emotional health; (7) reasoning and problem solving; and (8) scientific and technological development. Evaluation standards and levels of proficiency for the categories remain to be developed. (BC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED343703

PS 020429

Colorado
Sample Outcomes and Proficiencies
for
Elementary, Middle and High School Education

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
N. Bolt

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

cde

Colorado Department of Education
December 1991

BEST COPY AVAILABLE

Colorado
Sample Outcomes and Proficiencies
for
Elementary, Middle and High School Education

School Effectiveness Unit
Susan P. Schafer, Director
303/866-6608

Office of Educational Services
Arthur J. Ellis, Assistant Commissioner

William T. Randall
Commissioner of Education
State of Colorado

Colorado Department of Education
201 E. Colfax
Denver, Colorado 80203

cde

December 1991

Table of Contents

Page

Dance 1
Education Technology 9
English / Language Arts 26
Health Education 35
Mathematics 43
Music 62
Physical Education 70
Science 80
Second Language 109
Social Studies 117
Theatre 136
Visual Art 144
Vocational Education 152
Acknowledgments 161

Colorado State Board of Education

Sybil S. Downing	Patricia M. Hayes	Gladys Eddy	Royce D. Forsyth	Thomas M. Howerton	Ed Lyell	Hazel F. Petrocco
Chairman	Vice Chairman					
Member at Large	6th	4th	1st	5th	2nd	3rd
Boulder	Congressional District	Congressional District	Congressional District	Congressional District	Congressional District	Congressional District
	Englewood	Fort Collins	Denver	Colorado Springs	Broomfield	Pueblo

Foreword

The attached outcomes/proficiencies packets for grades 4, 8, and 12 are examples for districts to use in developing a standards-based and outcomes-based approach to curriculum, instruction and assessment. The sample outcomes/proficiencies are the result of numerous CDE and school district discussions regarding a needed bridge between the traditional departmentalized curriculum and the emerging interdisciplinary curriculum. Cooperative efforts between school districts, CDE, the New Standards Project, and other organizations will help refine the outcomes/proficiencies/demonstrations and lead to systems of standards using performances, portfolios, products, projects, and tests.

These sample outcomes/proficiencies/demonstrations are based on curriculum renewal efforts suggested by the Association for Supervision and Curriculum Development (ASCD). Timely principles which apply are:

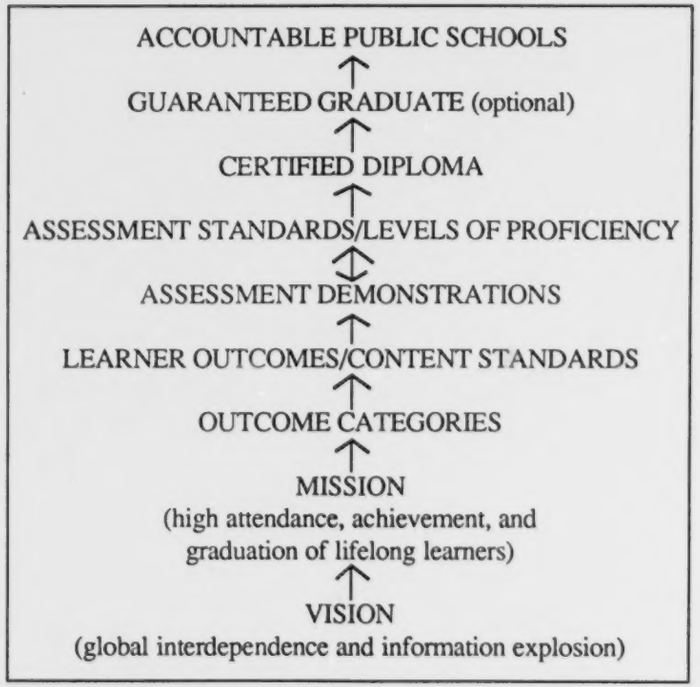
1. Rigid boundaries between the disciplines should be softened when appropriate to help students understand the connections among the subjects learned.
2. It is no longer acceptable to offer a rich curriculum filled with worthwhile content to advanced students and endless review and worksheets to the rest.
3. Curriculum must stop promoting the transmission (and occasional reception) of inert facts from teacher to pupil by supporting students' abilities to think critically and creatively and to solve problems and to become active learners.
4. Curriculum must become more efficient by cutting down needless review in order to ensure that new learning takes place constantly.
5. It is impractical to cover content at the expense of in-depth treatment because of an exploding array of information within the disciplines.

The outcomes/proficiencies/demonstrations are also based on the assumptions that:

1. Content and process both must be emphasized.
2. Appreciating and understanding diversity is necessary in a democratic society.
3. All students have unique linguistic, cultural, socioeconomic, and experiential backgrounds which contribute to a rich fund of prior knowledge.
4. Students will learn about women and men of many racial, ethnic, and cultural groups.

It should further be explained that outcomes and proficiencies fit with Colorado State Board of Education goals (high attendance, achievement, and graduation rate) and Colorado 2000 goals (readiness to learn; high graduation rate; high achievement and citizenship; high achievement in math and science; lifelong learning and literacy; and safe, drug-free schools).

The graphic below shows a sample alignment between outcomes/proficiencies/assessment and state goals and accountability.



In conclusion, the School Effectiveness Unit invites school districts to send us sample outcomes/proficiencies/demonstrations which meet local and state needs. The process of outcomes-based and standards-based education will continually be refined and be best achieved by cooperative efforts between school districts and CDE.

Susan P. Schafer, Director
School Effectiveness Unit
Colorado Department of Education

Outcomes and Proficiencies for Colorado's Vision and Mission for the Future

Vision

Learners of the future will live in a world of global economic and environmental interdependence, economies based on information and services, technological advances, and the explosion of information

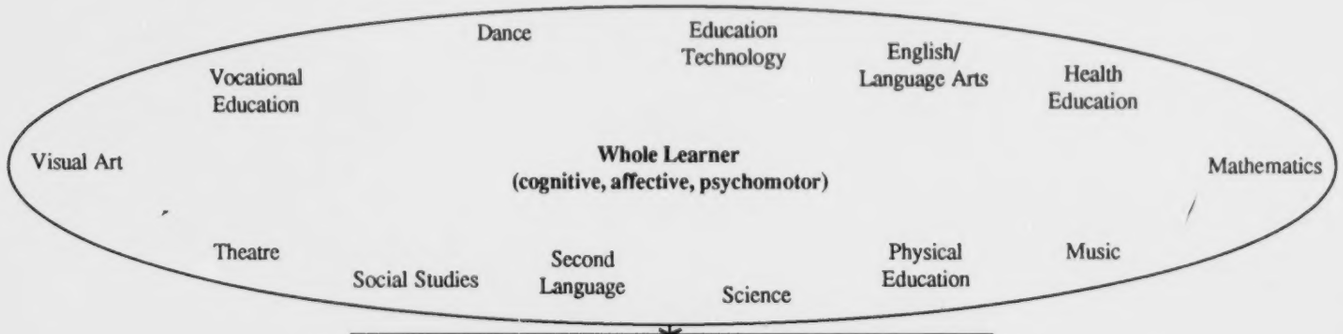
Mission

To enable every individual grow as a lifelong learner acquiring essential knowledge, skills, attitudes, and values; to assume productive roles in a democratic community and an interdependent environment and world; to risk, adapt, and make effective decisions that address the needs of humanity; and to affirm the worth and dignity of self and others.

Learner Outcome Categories

- Aesthetic Development
- Career Development
- Communication
- Human Relations and Responsibility
- Multicultural Understanding
- Physical/Emotional Health
- Reasoning/Problem Solving
- Scientific/Technological Development

Content Areas (to be integrated)



Proficiencies (see attached worksheets)

Descriptions of Learner Outcome Categories

AESTHETIC DEVELOPMENT

- Experiencing joy and beauty through participating in music, visual art (design, printing, photography, sculpture, weaving), theatre, dance, and literature.

CAREER DEVELOPMENT

- Information about career opportunities and decisions in planning and pursuing educational and career goals.

COMMUNICATION

- The ability to gain information and communicate through reading, writing, speaking, and listening in a variety of languages, media, and technology.

HUMAN RELATIONS AND RESPONSIBILITY

- Effective human relations utilizing interpersonal and group skills.
- Knowledge of and participation economically, politically, and socially in national and global interdependent systems.
- Personal integrity, the ability to anticipate consequences and the acceptance of responsibility for personal actions and decisions with emphasis on family responsibility.

MULTICULTURAL UNDERSTANDING

- An understanding of and respect for a multicultural heritage and the ideas and beliefs of others.

PHYSICAL / EMOTIONAL HEALTH

- A positive self-concept and feelings of self-worth supported by physical, mental, and emotional health.

REASONING / PROBLEM SOLVING

- Critical and higher-level thinking skills and proficiency in seeking and applying information to the solution of problems.

SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

- Mathematical, scientific and technological skills and the ability to apply these skills as productive participants in society.

Standards-based Education Glossary

A. **Outcomes:** The observable and measurable results of some process or event (e.g., learner outcomes, exit outcomes, etc.).

1. **Outcome Categories:** The fundamental domains of learning reflecting the school's or district's vision or mission, and providing the basis for learner outcomes and curricular integration.

2. **Learner Outcomes/Proficiencies:** Observable and measurable knowledge, attitudes, and skills a learner acquires and can demonstrate.

3. **Exit Outcomes:** The observable and measurable learner outcomes necessary at the point of high school graduation to become a lifelong learner. Demonstration of exit outcomes provides the basis for the certified diploma.

B. **Assessment:** The process by which what students know, believe, and can do is measured.

1. **Demonstration:** A specific activity, project, task, or performance that shows what the student has learned.

2. **Levels of Proficiency:** The degree to which the learner's performance on the demonstration matches the established standards (e.g., "excelling," "proficient," "in progress").

C. **Standards:** The set of characteristics or behaviors that serve as a measure for evaluation.

1. **Content Standards:** The set of unique subject area characteristics and behaviors that serve as a measure of what students are expected to learn.

2. **Performance Standards:** The set of characteristics or behaviors for a particular task against which demonstrations of learning are measured and evaluated. The tasks define the performance standards.

3. **Evaluation Standards:** The specific criteria upon which demonstrations are judged, scored, rated, or graded to determine if the performance standards have been met.

D. **Accountability:** Holding ourselves (students, parents, educators, and community members) responsible for meeting identified learner outcomes through a continuous cycle of planning, evaluation, and reporting.

1. **Certified Diploma:** A document which stipulates that a graduate possesses the knowledge, skills, and attitudes deemed by the local board of education to be necessary for entry into the work place and post- secondary education.

2. **Guaranteed Graduate:** A student earning a certified diploma endorsed by a local school district's policy which guarantees remediation if that student is found not proficient in skills necessary for the work place or post-secondary education.

Suggestions for Achieving Outcomes: Meeting the Needs of Students with Disabilities

The outcomes, proficiencies, and demonstrations provided to you as examples are appropriate for most students. However, some students who have been identified as having disabilities often have unique needs that require special consideration. For these students an IEP (individualized educational plan), specifically designed to reflect each student's strengths and needs, guides educational decisions. The IEP provides the focus for decision-making about which ones of all of the schools' learning outcomes are relevant and appropriate for each student with a disability.

To meet individual needs, we propose beginning with the IEP to identify appropriate outcomes. After the outcomes have been identified, appropriate modified proficiencies and demonstrations can be developed. For some students, certain proficiencies/demonstrations may not be appropriate. Those should be eliminated or adjusted. On the other hand, those proficiencies identified as crucial should take precedence. Meanwhile, additional proficiencies and demonstrations may be required for other students. In other words, in order for students with disabilities to be successful, the outcomes, proficiencies, and demonstrations should be sensitive to and match the learner's identified needs and skills.

For many students with disabilities, only slight adjustments to identified proficiencies and demonstrations are needed for success. However, in order for these students to acquire the targeted skills and demonstrate proficiency, it will be necessary to make adjustments to the way in which they are taught, the activities in which they participate, and the level of support that is needed. For instance, some students require more structure in their environment and assignments in order to learn; others require that tasks be broken into small, specific steps. Still others need more time . Students with specific disabilities such as impairments with vision or hearing will need to receive and give information in ways which allow them to be successful. Thus, the key to successfully teaching many students with disabilities is to vary the teaching and learning activities in order for them to demonstrate the same or very similar proficiencies and attain the same outcomes as those desired for their peers.

On the other hand, students with disabilities who have more intense educational needs may benefit from the same proficiency as their peers, but the relevant demonstration of this proficiency may be very different. For example, a proficiency for math for many students may be to reason mathematically to solve problems as demonstrated by the ability to use manipulative materials to solve a word problem. For a student with a more intense educational need, the proficiency to reason mathematically remains the same while the demonstration is adjusted to reflect the student's ability and needs. In this case, an adjusted demonstration might require the student to use a calculator in the grocery store to total the cost of the purchases and determine whether he or she has sufficient money to pay the bill. For still another student with intense educational needs, the demonstration might focus less on the academic portion of the proficiency and more on the acquisition of appropriate social skills (e.g., taking turns, greeting a peer, responding to a question, etc.). Thus, the key to successfully teaching students with more intense educational needs is to adjust the demonstrations to reflect relevant and practical applications individualized to specific student needs.

It is important to clearly delineate common educational outcomes for America's students. However, meeting the diverse needs of today's school population requires creativity and versatility. It may be necessary to change both the manner in which students are taught and the demonstrations of learning in order to meet students' needs. Given this flexibility, it is possible for all students to attain the same educational outcomes.

Addressing Needs of Gifted/Talented/High-Ability Students Through Outcomes, Assessment Tasks and Proficiency Standards

Gifted/talented/high-ability students are, along with students with disabilities, among a class of students with special needs. Though the outcomes, demonstration or assessment tasks, and proficiencies described in this packet are examples that may be appropriate for most students, there may be need to consider modifications, especially in the demonstration tasks and sometimes in the proficiency standards, so proficiencies address the needs of gifted/talented/high-ability students. The primary focus of such modifications is to guard against causing minimum proficiencies to become maximum expectations.

In general, if outcomes are well-formulated, they should be valid for all students regardless of individual differences among students. For instance, the broadly-stated outcome — "The student will demonstrate the ability to communicate effectively in writing in a wide variety of situations" — can apply to any student. Students with special needs may need modifications in the means by which the outcome is demonstrated or in some of the criteria by which they are judged; but, with few exceptions, the outcome is appropriate for all students.

The following guidelines should be used in formulating, adapting, or modifying demonstration or assessment tasks for gifted/talented/high-ability students.

The task should:

- be open-ended with challenging criteria specified, but with no ceiling for performance or achievement;
- involve complex and abstract subject matter and materials;
- put emphasis on higher-skill levels and performance demands;
- require depth of investigation and complexity of product;
- bring out depth of understanding at higher levels of thinking;
- provide opportunity to show insight in problem-solving;
- cause the student to exercise independence;
- place demands on creative thinking and creative production.

Proficiency standards, which are developed for judging the quality of task performance and the extent to which the desired outcomes are being achieved, should also reflect the guidelines above so that the special needs of gifted/talented/high-ability students are being appropriately addressed.

Dance / Movement

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

DANCE/MOVEMENT

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Distinguishes between dance performed as an art form, dance as recreation, and dance as entertainment; and interprets performances by others using dance vocabulary.	Demonstrates the basic elements of dance (space, shape, time, energy) and recognizes movement sequenced and choreographic structure as an art form. For Example: 4th Grade: Identifies the imaginative and expressive powers of movement. Illustration: Using a familiar story or poem, creates a short dance using movement to express the ideas. 8th Grade: Recognizes relationships between parts of dance composition and how they relate to the whole. Illustration: Selects a round. Uses changes of level in movement to show when the melody moves up and down the musical scale. 12th Grade: Interprets and evaluates performances by others. Illustration: Attends a live dance performance and gives a critique, either written or oral.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

DANCE/MOVEMENT

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Explores and assesses career opportunities through apprenticeships, private study, and performing experiences, and other career opportunities using skills necessary to develop interpersonal skills and appropriate work ethics.	Demonstrates knowledge of the range of career opportunities in dance and the resources available to explore dance career options. For Example: 4th Grade: Identifies potential areas of study or career opportunities. Illustration: Views video tapes and reads books about professional dancers in several dance styles. 8th Grade: Differentiates between talents and areas of personal skill. Illustration: Takes dance classes in school or from community agencies and assesses personal abilities. 12th Grade: Prepares resume, auditions, and practices interview techniques as they relate to specific job opportunities. Illustration: Attends auditions and interviews for placement in local dance companies; brings personal resume.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

DANCE/MOVEMENT

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes dance movement as a means of self-expression and non-verbal communication, and observes and responds to dance as an audience.	Demonstrates the social and cultural potential of dance as a method of communicating emotion and feelings of self and others. For Example: 4th Grade: Relates how dance enhances self-awareness and self-appreciation through movement (non-verbal) experiences. Illustration: With a partner, creates an original dance study using previously learned dance movements to a musical selection. 8th Grade Uses appropriate dance technique to perform for others. Illustration: Creates an original dance that expresses an emotion (sadness, curiosity, anger) with two partners. 12th Grade: Creates and performs an original dance expressing feelings and emotions. Illustration: In a group, selects an emotional feeling and uses original movement to convey that idea.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

DANCE/MOVEMENT

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Identifies dance as a model to interact positively with others, express personal ideas, develop personal and interpersonal involvement; and recognizes that dance develops relationships through feelings and ideas expressed from artist to observer.	Explains the universality of dance to express emotion to all of humankind regardless of background, develops personal/interpersonal potential of all dance styles and formats, and respects the diversity of dance as an expressive model. For Example: 4th Grade: Develops shared working potentials within the performance arena and explores the meaning and understanding of dance works to all. Illustration: With the class, creates a "dance play." Develops the theme, costumes, lighting, music, and program for presentation to others. 8th Grade: Differentiates how dance develops an understanding through: individual performances and ensemble experiences. Illustration: As a group, makes an original dance that allows some members to solo and others to perform within the ensemble. 12th Grade: Assesses level of contribution of dance to human history by relating to premise of themes through individual and group interworkings developing self-esteem, completion of tasks, and performance completion. Illustration: Researches the history of Jazz Dance, relating it to the music, social, and political movements of the time. Then re-creates this in a dance performance.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

DANCE/MOVEMENT

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands the vocabulary of dance and recognizes technical excellence and aesthetic clarity in dance performances as a means of the development of self-expression through problem-solving.	Analyzes choreography based on space, shape, time, and energy and recognizes traditional dance steps and basic elements of dance while responding to own work and the work of others with objectivity and understanding. For Example: 4th Grade: Develops individual and group expression through movement. Illustration: Uses traditional dance steps to make original folk dance. 8th Grade: Evaluates and attends live dance performances. Illustration: Attends a live dance performance and critiques the presentation. 12th Grade: Critically evaluates dance choreography for its artistic merit. Illustration: Using principles of choreography, evaluates a professional dance company's performance.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

DANCE/MOVEMENT

Outcome Category: SCIENTIFIC / TECHNOLOGY DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands and uses the relationship of dance to science, math, computer, and video and develops technology to analyze movement for expressive and corrective purpose while using technology as a means of preserving dance history.	Demonstrates skill in use of technology to develop programs for expressive and analytical use and demonstrates skill in using technical equipment to record dance performances for preservation. For Example: 4th Grade: Identifies and experiences the historical preservation of dance through technology. Illustration: Views dances preserved on video tapes. 8th Grade: Understands and uses the technology to experience creative ideas. Illustration: Uses films and video tapes of dance performances to create an original dance composition. 12th Grade: Uses the technology to develop and appraise an original work of art. Illustration: Creates a dance, video tapes it, critiques it, and makes refinements.	(To be developed: Excelling, Proficient, In Progress)

cde
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Education Technology

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students understand the role that technology and information skills play in creative and aesthetic development.	4th Grade: • Students use a CD-ROM to listen to a musical composition and analyze its featues, such as mood, beat, etc. • Students use a computer to produce a visual product such as a banner, poster, or greeting card. • In pairs, students use the catalogue to find a play for two characters and present the play to the class. 8th Grade: • Students set a simple poem or chant to music using music computer software. • Students use desktop publishing to produce an illustrated story. • Students use a print or electronic index to find reviews of current plays. 12th Grade: • Students use computer software to produce chords and rhythm patterns that accompany a choral group. • Students use desktop tools to produce visually pleasant products such as graphs, charts, illustrations, or posters. • Students use a computer to create and manage lighting for a stage production.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

EDUCATION TECHNOLOGY

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students locate, select, analyze, and evaluate information about career choices.	4th Grade: • Students compare print, non-print, electronic, and human resources to learn what people in specific careers do, and produce an illustrated presentation of one career. 8th Grade: • Students use print, non-print, electronic, or human resources to explore careers in which they might be interested, interview a person in that career, and prepare a skit about it. 12th Grade: • Students select a word processing program of preferred choice and prepare a formal resume suitable for employment or continuing education.	(To be developed: Excelling, Proficient, In Progress)
Students know how to use a computer key board.	4th Grade: • Students know the location of the keys and proper finger placement, and can produce an error-free one-page document. 8th Grade: • Students use a computer keyboard with speed and accuracy and can produce an error-free report of two or more pages. 12th Grade: • Students use a computer keyboard with speed and accuracy to produce a research project or term paper.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

EDUCATION TECHNOLOGY

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students define an information need, focus the topic, and develop a search strategy.	4th Grade: • Students find a nonfiction book by call number in a catalogue (electronic or print) and find the book on the library shelf. 8th Grade: • Students access information on a specific topic through electronic equipment (such as computer databases, electronic encyclopedias); print sources (such as Reader's Guide, encyclopedias, magazines); and nonprint resources (such as videos, audiotapes). 12th Grade: • Students discriminate between types of resources and choose the appropriate resources for the specific information need. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

EDUCATION TECHNOLOGY

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students gather, organize, and record information from a variety of print, nonprint, electronic, and human resources.	4th Grade: • Students take simple notes from one source using keywords and phrases. • Students develop questions to determine what they want to know about a topic such as a state or an animal. • Students listen and follow written and verbal instructions. 8th Grade: • Students classify, sequence, and group information using clustering, webbing, mapping, or outlining. • Students conduct an interview of five simple questions and record the information. • Students skim and scan material to locate main ideas and supporting ideas. 12th Grade: • Students take notes from three different sources (print, nonprint, or electronic) and synthesize the notes into a logical oral or written presentation . • Students develop a list of questions, conduct an interview, record the information, and organize and present the information in a written article.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students share information in a variety of oral, print, nonprint, and electronic formats.	4th Grade: • Students use word processing to produce a story. 8th Grade: • Students share the results of a research project through an oral presentation which might include videotape or hypermedia. 12th Grade: • Students use word processing to produce a formal research paper including an example of hypermedia such as a bibliography on hypercard stacks.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students know how to use a computer keyboard.	4th Grade: • Students know the location of the keys and proper finger placement and can produce an error-free one-page document. 8th Grade: • Students use a computer keyboard with speed and accuracy and can produce an error-free report of two or more pages. 12th Grade: • Students use a computer keyboard with speed and accuracy to produce a research project or term paper.	(To be developed: Excelling, Proficient, In Progress)
Students define an information need, focus the topic, and develop a search strategy.	4th Grade: • Students will find a nonfiction book by call number in a catalog (electronic or print) and find the book on the library shelf. 8th Grade: • Students will access information on a specific topic through electronic equipment (such as computer databases, electronic encyclopedias); print sources (such as Reader's Guide, encyclopedias, magazines); and nonprint resources (such as videos, audiotapes). 12th Grade: • Students discriminate between types of resources and choose the appropriate resources for the specific information need.	

(Continued)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students gather, organize, and record information from a variety of print, nonprint, electronic, and human resources.	4th Grade: • Students take simple notes from one source using keywords and phrases. • Students develop questions to determine what they want to know about a topic such as a state or an animal. • Students listen and follow written and verbal instructions. 8th Grade: • Students classify, sequence, and group information using clustering, webbing, mapping, or outlining. • Students conduct an interview of five simple questions and record the information. • Students skim and scan material to locate main ideas and supporting ideas. 12th Grade: • Students take notes from three different sources (print, nonprint, or electronic) and synthesize the notes into a logical oral or written presentation. • Students develop a list of questions, conduct an interview, record the information, and organize and present the information in a written article.	(To be developed: Excelling, Proficient, In Progress)
Students share information in a variety of oral, print, nonprint, and electronic formats.	4th Grade: • Students use word processing to produce a story. 8th Grade: • Students share the results of a research project through an oral presentation which could include a videotape or hypermedia. 12th Grade: • Students use word processing to produce a formal research paper using an example of hypermedia such as a bibliography on Hypercard stacks.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students use equipment cooperatively to facilitate learning.	4th Grade: • Students use a computer to write a story with a partner. 8th Grade: • Students work cooperatively in groups to complete scientific experiment with electronic equipment such as scientific probes and laser disc players. 12th Grade: • Students work in a small group to plan and execute an online such on a current social issue such as child abuse.	(To be developed: Excelling, Proficient, In Progress)
Students identify a social problem within the school, such as negative peer pressure or drug abuse or cultural differences.	4th Grade: • Students brainstorm in small groups evidence of peer pressure through use of a web and determine three to five methods for reducing pressure. 8th Grade: • Students write and produce commercials in either written or video format to help students develop refusal skills. 12th Grade: • Students choose a print, nonprint, or electronic format (such as a comic strip, song, hypermedia) and produce and present a program to elementary school students on refusal skills.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students appropriately care for resources.	4th, 8th, and 12th Grades: • Students demonstrate the ability to correctly use resources (appropriate for their grade level), such as books, computers, and magazines by following procedures of proper use and care of these resources.	(To be developed: Excelling, Proficient, In Progress)
Students understand copyright restrictions as they apply to print material and computer programs.	4th Grade: • Students understand that they may not copy copyrighted computer disks and can list the penalties for doing so. 8th Grade: • Students understand that copyright restrictions are enforced to protect the individual who created the material. 12th Grade: • Students know how to determine whether or not materials can be copied.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

EDUCATION TECHNOLOGY

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students know what plagiarism is and how to use resources appropriately.	4th Grade: • Students take simple notes using keywords and phrases, rather than verbatim copying. 8th Grade: • Students read a passage and paraphrase the information. 12th Grade: • Students synthesize information from diverse sources such as a magazine article, a video, and an encyclopedia without copying.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students use print, nonprint, electronic, and human resources to learn about other cultures.	4th Grade: • Students create a multicultural calendar using a computer software program showing African American, Asian/Pacific Islander, Hispanic American and Native American Indian. 8th Grade: • Students use telecommunications resources to communicate with students in another culture and country. 12th Grade: • Students trace the development of the civil rights movement in the United States using print, nonprint, or electronic resources and create a presentation using hypermedia.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: PHYSICAL / EMOTIONAL / MENTAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students use a variety of print, nonprint, electronic, and human resources to learn and apply knowledge about physical, emotional, and mental health.	4th Grade: • Students use a computer program to record heart rate and blood pressure. 8th Grade: • Students use print, nonprint, or electronic resources to determine a healthy diet for a teenager and use a computer program to develop a personal nutrition program. 12th Grade: • Students find current information on AIDS using an electronic magazine or new index, and create tables, graphs, or a database to present information about the effect of AIDS on society.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students use print, nonprint, electronic, and human resources to facilitate reasoning and problem solving tasks.	4th Grade: • Students use brainstorming techniques to develop focused ideas from a broad topic such as "my family ...". 8th Grade: • Students develop a search strategy, locate resources in a variety of formats, analyze and select appropriate information on a topic of their choice, and demonstrate their process through a hypercard stack or a written journal. 12th Grade: • Students use a variety of materials (books, CD-ROM, videos, human resources) to develop a class presentation based on an open-ended question such as, "Why was Martin Luther King able to become a leader of the civil rights movement?"	(To be developed: Excelling, Proficient, In Progress)
Students distinguish between fact and opinion.	4th Grade: • Students use photographs or pictures and present one fact and one opinion about each picture. 8th Grade: • Students listen to a speech and, in small groups, list what was fact and what was opinion. 12th Grade: • Students read an article from a popular publication such as *People, USA Today,* or the *National Inquirer* and list unsubstantiated statements and develop a strategy to prove or (Continued)	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

EDUCATION TECHNOLOGY

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
disprove those statements. Students dinstinguish bias and prejudice.	4th Grade: • Students taste various foods whose color has been changed (such as blue milk) and keep a log about their perceptions. 8th Grade: • Class participates in a simulation which discriminates against people with certain traits such as blue eyes and debriefs via a class discussion. 12th Grade: • Students read a publication by the Ku Klux Klan and, through a group discussion, determine how the publication uses bias to influence opinion.	(To be developed: Excelling, Proficient, In Progress)
Students delineate cause and effect.	4th Grade: • Students research and build a model about a natural phenomenon such as an erupting volcano or soil erosion. 8th Grade: • Students cooperatively develop ten "if, then" statements about their daily lives, such as, "If I oversleep, then I will be late to school."	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

EDUCATION TECHNOLOGY

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students make generalizations.	4th Grade: • Students survey uneaten lunches and develop generalizations about food likes and dislikes among elementary students. 8th Grade: • Students compile a list of generalizations about a specific career, research the accuracy of those generalizations, and develop a spreadsheet about their findings. 12th Grade: • Students analyze the inaugural speech of a U.S. President and decide from events which occurred during the term of office whether or not the President carried out his plans.	(To be developed: Excelling, Proficient, In Progress)
Students analyze and synthesize information from diverse sources.	4th Grade: • Using telecommunications, students survey their peers in other areas of the country about a specific topic such as their pets and draw conclusions about that information. 8th Grade: • Students select a school topic, interview at least four people (teacher, parent, administrator, student) and prepare a skit or role play that demonstrates the differences in perceptions. 12th Grade: • Students use three of the following sources: a diary or journal, an interview, a video or film, a book or magazine article, an electronic or print encyclopedia to write an essay on	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

EDUCATION TECHNOLOGY

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
"The 60's were a time of ...". Students manipulate appropriate electronic equipment, including computers, laser disks, CD-ROMS, modems, scientific test equipment, and video cameras.	4th Grade: • Students know the location of the keys and proper finger placement. 8th Grade: • Students use a computer keyboard with speed and accuracy. 12th Grade: • Students use a computer keyboard with speed and accuracy.	(To be developed: Excelling, Proficient, In Progress)
Students use electronic equipment and share information they have gathered.	4th Grade: • Students produce a visual product on the computer (such as a greeting card, a graphic design, a picture to support a story). 8th Grade: • Students use electronic equipment to present information in a variety of ways such as databases, spreadsheets, laser disk presentations, hypercard programs, videotapes. 12th Grade: • Students use electronic equipment to present information in a variety of ways such as databases, spreadsheets, laser disk presentations, hypercard programs, videotapes.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

EDUCATION TECHNOLOGY

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Students use appropriate and available electronic equipment to access information.	4th Grade: • Students can properly insert a commercial program computer disk and access the program. 8th Grade: • All students use an electronic encyclopedia to access information from keywords which the student has. 12th Grade: • Students use databases, spreadsheets, and online information sources to retrieve and present information.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

English / Language Arts

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

ENGLISH/LANGUAGE ARTS

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Recognize quality in a variety of visual and performing arts.	Students at All Grade Levels: • Experience a variety of visual and performing arts. • Develop criteria for evaluating visual and performing arts. • Apply criteria to specific works of visual and performing arts. For Example: 4th Grade: Analyze a production or product of visual or performing arts based on a class-produced list of criteria and write a review. 8th Grade: Analyze an individually-selected production or product of visual or performing arts based on an individually developed list of criteria and write a review. 12th Grade: Compare and contrast a number of works by the same playwright/artist/dancer/musician using a selected list of criteria and write an essay supporting or refuting the proposition that the playwright/artist/dancer/musician produced quality work.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

ENGLISH/LANGUAGE ARTS

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Recognize a diverse and changing range of career opportunities and assess self in relation to career opportunities.	Students at All Grade Levels • Demonstrate skills in: — solving problems — making decisions — accessing and using appropriate research resources — identifying metacognitive strategies — communicating ideas and opinions. For Example: 4th Grade: Identify and investigate a career area of interest and present a report on the career area with an explanation of the process followed to produce the report. 8th Grade: Evaluate personal skills and talents, identify and justify possible career choices based on the evaluation. 12th Grade: Present a project that identifies significant changes in career choice over the past 200 years and the reasons for the changes and project possible careers of the future.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

ENGLISH/LANGUAGE ARTS

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Comprehend, generate, and present various types of oral and written communication.	Students at All Grade Levels: • Recognize various forms and purposes of oral and written communication. • Produce various forms of oral and written communication appropriate to purpose and audience. • Consider the role of listening skills in oral communication. • Consider the role body language plays in oral communication. For Example: 4th Grade: • Welcome parents/guests to a school function. • Write a thank you note to a guest speaker. • Write a description to introduce a topic, place or thing to another student. • Write a personal reaction to a book or story as a review for a newspaper. • Develop a media presentation on a theme for a selected audience. • Keep a journal, daybook or learning log as an aid in reviewing learning. 8th Grade: • Present a speech about a personal belief to the class. • Write an invitation to a school function for a community member. • Explain either in writing or orally how to do a task for another student to follow. • Write a paper comparing two authors, stories, or ideas presented in literature. • Develop a media presentation on a theme. • Keep a journal, daybook or learning log to document learning. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

ENGLISH/LANGUAGE ARTS

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Present a speech to a community audience urging that an action be taken. • Write an editorial for the school or community newspaper. • Write an essay defending a point of view. • Develop a multi-media presentation for the school parents group comparing the works of an author or several authors who write on the same theme or in the same era as a PTA program. • Keep a journal, daybook or learning log to reflect on learning and the learning process.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

ENGLISH/LANGUAGE ARTS

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Interpret personal and interpersonal words by: — using literature to understand another's point of view. — recognizing the universality of human experience. — accessing personal experiences. — accessing the experiences of others. — accessing information from secondary sources. — using writing to discover personal and social responsibility. — interacting positively with others.	4th Grade: Through freewriting, journaling, interviewing, reading, observing and discussing, identify values that direct a literary character's behavior and compare and contrast those values to personal values. 8th Grade: Through freewriting, journaling, interviewing, reading, observing and discussing, determine the literary theme of several selected works as they reflect personal experiences and social interaction. 12th Grade: Through freewriting, journaling, interviewing, reading, observing and discussing, develop a question that might be answered in several selected literary works (i.e., What is of greatest value? What is man's or woman's essential purpose? What is "responsible behavior"?) and work in a group setting to answer the question and provide a rationale for the answer.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

ENGLISH/LANGUAGE ARTS

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Identify the variety of customs, beliefs, values, and concerns that are part of the cultures of the United States and the world and understand their interrelatedness by: — recognizing universal elements of literature — recognizing cultural differences — reflecting on human experience as expressed through literature.	Students at all Grade Levels: • Summarize oral, written or media presentations. • Form and support an opinion in oral, written, or media form. • Read literature about varying cultures. • Read literature from varying cultures. • View or hear music, dance, or performances from a variety of cultures. For Example: 4th Grade: Read work of fiction and explore a variety of supplementary resources (i.e., music, dance, performances) about children in a country other than the United States and compare and contrast the lives of those children to his or her own life in an oral or written presentation. 8th Grade: Read a biography and explore supplementary resources about a person from a different culture (i.e., African-American, Hispanic, or Native American) who has contributed to the quality of life in the United States, and prepare and present an informative speech, a research paper, a multi-media presentation or a creative project that defines and explains the person's contribution. 12th Grade: Read biographies and explore supplementary materials about several people from different cultures who are recognized as making significant contributions to the quality of life in the world and compare and contrast their lives, beliefs, values, and actions to find an answer to the question, "What qualities determine greatness?" Design an oral, written, or other media presentation (i.e., role play, musical performance) to present student answers to the question.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

ENGLISH/LANGUAGE ARTS

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Create a dynamic sense of self as an active participant, responsible for one's actions.	Students at All Grade Levels: • Develop strategies for making choices and criteria for evaluating decisions. • Develop strategies and expertise in questioning and exploring. • Recognize the importance of the individual. For Example: 4th Grade: Tell a personal story about an event (i.e., a physical challenge or an artistic performance) and explain why that particular event was chosen. 8th Grade: Select and analyze a personal success, physical challenge or achievement and explain how it was achieved. 12th Grade: Establish and explain personal goals (i.e., fitness, achievement, learning), how they will be accomplished, and how they will be evaluated.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

ENGLISH/LANGUAGE ARTS

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Evaluate the quality of his or her own and other's ideas.	Students at All Grade Levels: • Listen to speeches. • Read books, articles, essays, and other print materials. • View multi-media presentations. • Use media and technology to access needed information. • Select information appropriate for a purpose. • Recombine information from different sources into a product. • Analyze the reasonableness of generalizations and the credibility of evidence. • Generate valid support for a point of view. For Example: 4th Grade: Collect advertisements for products familiar to the class. Consider the accuracy of the claims made for the product. Design ads for the products that fit the experiences of the students. 8th Grade: Identify the opinions expressed in an editorial or television program or advertisement and hypothesize reasons why those opinions are held. Decide if the reasoning behind the opinion is logical. 12th Grade: Design a product needed in the world today (i.e., a time-stretcher, clothes that don't wear out, a food that meets all nutritional needs) and prepare advertisements in a variety of media to promote the product. Prepare product information that supports your view that this is a needed product.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

ENGLISH/LANGUAGE ARTS

Outcome Category: SCIENTIFIC / TECHNOLOGY DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's English/Language Arts education, each student will be able to: • Use appropriate technology in completing a task.	Students at All Grade Levels: • Use technological information. • Use word processing skills. • Demonstrate self-confidence in using technological equipment. • Access information from computerized sources. • Collect information on a specific topic from a variety of sources. For Example: 4th Grade: Write directions for the use of selected technology such as a computer program, a camcorder or a VCR. Compare student-written directions with those accompanying the equipment and compare and contrast the clarity, completeness, and understandability of the two sets of directions. 8th Grade: Write directions for the use of selected technology, such as a computer program, a camcorder, or a VCR, and assist others in the use of the equipment. Prepare an evaluation form that will be used by the "trainees" to assess the effectiveness of the training. 12th Grade: Produce a technological product and write a rationale for the particular piece of technology as the best way to communicate a particular message.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Health

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of the study of health education, each student will be able to recognize the benefits that aesthetic beauty contribute to emotional and physical well being.	4th Grade: • Understand how music, visual art and dance movement develop an emotional feeling. • Develop a creative dramatic experience that expresses a wide range of emotional feelings (i.e., role play fear, anger, sadness, joy). 8th Grade: • Understand the value of performing and visual art as a "natural high" versus the use of other mind altering substances. • Debate the advantages of drinking beer and watching TV vs. participating in school and ... • Discover and analyze the creative self and the range of emotions available through the performing and visual arts, i.e., dancing, singing, acting, sculpting, photography, etc. 12th Grade: • Create a journal or portfolio of specific emotional responses to a film, concert, or art exhibit, and discover how the responses can relate to the healthy development of self and others. • Develop and analyze an original piece of dance (i.e., foxtrot, cha cha) as a need to express, communicate, and understand the role of movement to emotional well-being.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will recognize the relationship of good physical health to effective job performance.	4th Grade: • List five self-induced health problems that would increase job absenteeism. 8th Grade: • Select one primary cardiac risk factor relating to a sedentary work environment, and decide how to lower this risk. 12th Grade: • Defend in writing a decision relating to a particular job situation where there is pressure to perform unhealthy behaviors such as lifting heavy objects, eye strain from computer screens, or breathing passive smoke.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will understand and practice effective interpersonal communication skills that are directly related to health issues.	4th Grade: • Demonstrate, in a role-play situation, three ways to say "no" when pressured to drink alcohol or do drugs. 8th Grade: • Listen to verbal directions on how to give CPR and restate the directions in the correct progressive order. 12th Grade: • Participate in a small group discussion on values and beliefs of a personally healthy life-style and prepare an oral report on the group's consensus.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: HUMAN RELATIONS / SOCIAL RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will comprehend how health factors play a role in one's ability to be socially responsive and responsible.	4th Grade: • Discuss how health problems can cause people to become socially withdrawn. 8th Grade: • Write a narrative on how national health catastrophes such as plagues, famines, or natural disasters influence governmental policies and social reform. 12th Grade: • Analyze statistics on socio-economic neighborhoods as to how personal gratification, drug use and sex influence the quality of life in the neighborhood.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will contrast health standards and health behaviors in a variety of cultures, both past and present.	4th Grade: • Construct a chart comparing the eating habits of cultures around the world. 8th Grade: • Critique the nutritional value of a particular country's main food source as compared to the United States' main food sources. 12th Grade: • Write a treatise defending or rejecting the concept of national health care based on its level of need and success in other countries.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: PHYSICAL / EMOTIONAL HELTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will recognize and examine the range of emotions and how they relate to overall personal health.	4th Grade: • Draw faces showing feelings that influence one's physical well being. 8th Grade: • Select an emotion and explain in small groups how this emotion, if unchecked, can lead to physical violence. 12th Grade: • Design a stress reduction program for his/her self based on his/her own needs and life-style.	(To be developed: Excelling, Proficient, In Progress)
The student will understand the role of physical exercise and recreative activities as they relate to overall personal health.	4th Grade: • Design a poster detailing proper personal hygiene, especially as it relates to the physically active life-style 8th Grade: • To understand lifelong sports, make a graph of major sports and recreation showing the average playing years of each. 12th Grade: • Participate in an activity involving a controlled degree of excitement and personal risk, such as canoeing or rock climbing, and afterward present a panel describing the self-satisfaction of feelings arising from mastering a challenge.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will acquire decision-making skills that will lead to a healthy life-style and know how to rationally analyze situations and factors with the potential to influence health.	4th Grade: • Analyze a newspaper article on an accidental death, and rewrite the scenario with choices that produce a safe ending. 8th Grade: • Select an important national health problem, such as heart disease, AIDS, fetal alcohol syndrome, etc., and devise a national strategy to combat it. 12th Grade: • Devise a personal strategy or program for lifelong health, including factors on nutrition, recreation, leisure, etc.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

HEALTH EDUCATION

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will recognize the effects of technological advances toward improving personal health and wellness.	4th Grade: • Collect newspaper or magazine articles describing today's major health disease/issues where research is advancing toward a cure. 8th Grade: • Create a new device or piece of medical equipment that could be used to cure a specific problem. 12th Grade: • Write an essay on the health status of the nation in the year 2020 A.D. outlining the plausible demographic needs of that time period.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Mathematics

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

MATHEMATICS

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Recognize and value the role mathematics plays in a variety of visual and performing arts, other creative activities, or aesthetic areas in nature.	Students at All Grade Levels: • Apply mathematical criteria to areas of visual or performing arts (i.e., graphics, pottery, sculpture, theater, photography). • Develop mathematical criteria in the evaluating process of dance, music, theater, painting, layouts. • Appreciate the role mathematics plays in the formulation of art forms. For Example: 4th Grade: • Design a musical instrument using mathematical calculations to investigate the value of sound partials and length of pipe/tubing/cord. • Using the body as a computive tool, show various mathematical functions, i.e., addition, subtraction, division, etc. • Create designs by tessellating regular polygons and then investigate and report to the class how the designs may be changed by shading or coloring them in different patterns. Student investigations should include a variety of types of symmetry. 8th Grade: • Analyze the Fibonacci Series and its replication in spatial perspectives and in nature. • Analyze the role mathematics played in the development of musical scale formulae and the development of western music in the European 16th and 17th centuries. • Create tessellated designs using both regular and irregular polygons. They then investigate, describe, and report the number of patterns found by measuring the angles at the vertices of the figures in the cells. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

MATHEMATICS

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Assess the role that mathematical computation plays in the formulation of aesthetic discovery (i.e., acoustics, light angle and placement, sound partials, velocity of movement. • Create tessellated designs using Escher-type figures and then describe them algebraically.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Recommendations based upon the National Council of Teachers of Mathematics
Curriculum and Evaluation Standards for School Mathematics Copyright © 1989

Standards-based Education Examples

MATHEMATICS

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Recognize that mathematics is integral for career opportunities. • Understand the mathematical requirements necessary for specific career choices.	Students at All Grade Levels: • Recognize that mathematics is an important requirement for many jobs. • Describe the mathematical requirements of a variety of careers. Students at Grade 12: • Recognize the applicability of mathematical ideas to common and complex problems. • Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as art, music, psychology, science, and business. • Understand the necessity for continual mathematics learning for career flexibility. For Example: 4th Grade: After listening to a variety of guest speakers talk about how mathematics is used on their jobs, students will write a paragraph describing the importance of mathematics to their future job. 8th Grade: Students will play the EQUALS game "ODDS ON YOU" and then discuss and write a summary describing how the results could be altered by the mathematics that the players took. 12th Grade: Students will find, bring to class, and fill out a variety of job applications. They will then prepare a list of the mathematics ideas or courses that are necessary to apply for three of the jobs. Recommendations based upon the National Council of Teachers of Mathematics *Curriculum and Evaluation Standards for School Mathematics* Copyright © 1989	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Communicate mathematically by reading, writing, and discussing ideas in which the language of mathematics is used.	Students at All Grade Levels: • Express mathematical ideas orally and in writing. • Use the skills of reading, listening, and viewing to interpret and evaluate mathematical ideas. • Model situations using oral, written, concrete, pictorial, and graphical methods. • Develop common understandings of mathematical ideas, including the role of definitions. • Discuss mathematical ideas and makes conjectures and convincing arguments. For Example: Students will implement a plan to conduct a survey and analyze the data collected. 4th Grade: Students select a topic of interest such as favorite ice cream flavor or number of pets at home. Students will devise a plan and then collect, organize, and display the data collected. Students will discuss or write the conclusions of their study. 8th Grade: Students are given the following problem: A national magazine surveyed teenagers to determine the number of hours of TV they watched each day. How many hours do you think the magazine reported? Students will discuss their predictions in small groups, write summaries of their group work or of their own ideas, share their predictions with the class, discuss their reasoning, and compare their predictions with the magazine's report. Students can then design and conduct their own survey and compare it with the national survey, prepare a written report, compare results from different groups, and evaluate their findings. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: Students survey a sample of the school's senior students asking them what their plans are upon graduation from high school. Students identify important elements of the problem, such as sampling techniques and formulation of survey questions. Students explore the mathematical relationships within the problem by comparing the relative size of each group, and interpret the data. Students write a short article that could appear in the school newspaper about the results of the survey which must include statements that show interpretations or conclusions derived from the survey data.	(To be developed: Excelling, Proficient, In Progress)
cde COLORADO DEPARTMENT OF EDUCATION STATE OFFICE BUILDING 201 E. COLFAX DENVER, COLORADO 80203 December 1991	Recommendations based upon the National Council of Teachers of Mathematics *Curriculum and Evaluation Standards for School Mathematics* Copyright © 1989	

Standards-based Education Examples

MATHEMATICS

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Recognize mathematics as a common human endeavor and apply mathematics to social problems.	Students at All Grade Levels: • Solve mathematical problems individually and cooperatively. • Accept divergent approaches and solutions to problems. • Understand mathematics sufficiently to become informed citizens. • Grasp implications of mathematical concepts which permeate daily experiences. • Verify and interpret results from mathematical situations. • Construct and draw inferences from charts, tables, and graphs that summarize data from real-world situations. • Explore concepts of probability. Students at Grade 8: • Present arguments that are based on data analysis. • Model situations by constructing a sample space to determine probabilities. Students at Grade 12: • Understand sampling and recognize its role in statistical claims. • Analyze the effects of data transformations on measures of central tendency and variability. • Use experimental or theoretical probability, as appropriate, to represent and solve problems involving uncertainty. • Understand the concept of a random variable. • Describe, in general terms, the normal curve and use its properties to answer questions about sets of data that are assumed to be normally distributed. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	For Example: 4th Grade: Students collect the paper garbage from their classroom, grade level, and/or school for a given period of time. They use their paper garbage collection to sort, classify, graph, interpret data and draw conclusions about the amount and kinds of paper thrown away. They then use the amount (weight) of paper to project the total amount used by the school or school district and the impact of recycling. (The same project could be done with aluminum cans and students could then plan what to do with the money earned after recycling them.) 8th and 12th Grades: The school has a limited amount of money for community education and one of the areas that they are considering is "Ways to Help Save the Environment." The principal would like to know how much your community is already involved in recycling. Your job is to find out how many students' families are involved in recycling and what each family recycles. Prepare the survey, collect information, and organize your data into some type of graphical representation or diagram. Write a brief report to the principal recommending whether or not education on recycling is necessary for your community. Recommendations based upon the National Council of Teachers of Mathematics *Curriculum and Evaluation Standards for School Mathematics* Copyright © 1989	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Recognize that mathematics is a way of thinking accessible to all students. • Recognize major cultural and individual contributions to mathematics both past and present.	Students at All Grade Levels: • Appreciate the role of mathematics in the development of cultures and societies and its value as a tool and as a language. • Understand that the use of mathematics is universal to all cultures. For Example: 4th Grade: Students bring in family recipes for a given food group. Comparisons are made about the similarities, differences, and amounts of ingredients used in the recipes. Comparisons should be made on a number of levels to insure diversity -- within the class, among different classes, between classes in different states, etc. The study of breads in different cultures (tortillas, pita bread, spoon bread, scones) lends itself well to this activity as well as to rich discussions on food preparation and presentation as well as the effects of socio-economics on life-styles. 8th Grade: Students either call McDonald's in different parts of the country or report from their own experience the differences in items and costs of items. (How much does a Big Mac cost in Moscow? What do they serve there that is not served in the local McDonald's?) In small groups they prepare explanations for why they think these differences occur as well as what similarities exist. The group reports their explanations to the rest of the class. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

MATHEMATICS

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: Students research and compare mathematical contributions of various cultures. For example, students research, prepare, and give a presentation on the underlying concepts of various number systems such as Roman, Egyptian, Babylonian, Mayan, and Hindu-Arabic. Students compare and contrast the uses of current number systems such as decimal and binary with historical number systems.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Recommendations based upon the National Council of Teachers of Mathematics
Curriculum and Evaluation Standards for School Mathematics Copyright © 1989

Standards-based Education Examples

MATHEMATICS

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Demonstrate a positive mathematical disposition.	Students at All Grade Levels: • Display confidence in using mathematics to solve problems, to communicate ideas, and to reason. • Exhibit willingness to persevere in mathematical tasks. • Show interest, curiosity, and inventiveness in doing mathematics. • Monitor and reflect on their own thinking and performance. For Example: Self-reflective student portfolios which contain a mathematical autobiography, student feelings about their abilities in mathematics, and examples of their best work with reflections on what makes it a best work are a way to measure this proficiency at all grade levels. 4th Grade: Students look at the recipes collected in the multicultural activity and use them to compare the calories, fat, and cholesterol levels. They could look for connections between health problems and the data. 8th Grade: Select a personal successful experience in solving a mathematics problem. Describe why you were successful and what characteristics this problem has that you like. 12th Grade: Explain the characteristics of a person who is good at math.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Recommendations based upon the National Council of Teachers of Mathematics
Curriculum and Evaluation Standards for School Mathematics Copyright © 1989

Standards-based Education Examples

MATHEMATICS

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Reason mathematically to solve problems.	Students at All Grade Levels: • Use problem-solving approaches to investigate and understand mathematical content. • Formulate problems from everyday and mathematical situations. • Develop and apply strategies to solve a wide variety of problems. • Draw logical conclusions about mathematics. • Apply reasoning processes. • Verify solutions to problems. For Example: Given the problem: *How many handshakes will occur at a party if each guest shakes hands with each of the other guests?* 4th Grade: Limit the problem to five guests. Students select and apply a problem-solving strategy to solve this problem. Some students will choose to act the problem, others may use manipulative materials such as gumdrops and straws to model the problem, and others may list the pairs of guests who will shake hands with one another. Students will explain their solution to this problem orally and /or in writing and will justify their answer and solution processes. 8th Grade: Suppose fifteen people are at the party. Students select and apply a problem-solving strategy to solve this problem. Strategies used could include solving a simpler problem, making an organized list, looking for patterns using a table, or making a geometric model. Students will explain their solution to this problem in writing and will validate their thinking and solution processes. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

MATHEMATICS

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: Extend the problem to **n** guests, where **n** can represent any number of guests. Have students select and apply a problem-solving strategy to solve this problem. Students will explain their solution to this problem in writing using appropriate mathematical terminology and symbolism. Students will validate their solution for a given **n.**	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Recommendations based upon the National Council of Teachers of Mathematics
Curriculum and Evaluation Standards for School Mathematics Copyright © 1989

Standards-based Education Examples

MATHEMATICS

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Understand and apply mathematical and technological concepts and skills by — comprehending numbers and number relationships and applying appropriate calculation procedures in problem situations.	Students at All Grade Levels: • Construct number meanings through real-world experiences and the use of physical materials. • Understand our numeration system by relating counting, grouping, and place-value concepts. • Develop meaning, mathematical language, and symbolism for the operations of addition, subtraction, multiplication, and division by modeling and discussing a rich variety of problem situations. • Use a variety of mental computation and estimation techniques. • Understand, represent, and use numbers in a variety of equivalent forms in real-world and mathematical problem situations. • Understand and apply ratios, proportions, and percents in a wide variety of situations. • Develop and apply number theory concepts such as primes, factors, and multiples in real-world and mathematical problem situations. • Develop concepts of, number sense for, and compute with common number systems such as whole numbers, fractions, and decimals. • Select and use an appropriate method for computing from among mental arithmetic, paper-and-pencil, calculator, and computer methods. For Example: 4th Grade: Students are asked to describe how they would do the following: *You are going to teach a second grader what multiplication is all about. How would you go about this? What materials would you like to use? Show me what you would do.* (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: Students are given the following problem: *Bob says that an increase from 10 to 40 is 300% and, therefore, a decrease from 40 to 10 must be a 300% decrease. Students are asked if they agree with Bob. They explain their reasoning.* 12th Grade: Students are given the following problem: *Fran knows that half of the students from her school are accepted at the University of Colorado and half are accepted at the University of Denver. Fran thinks that this adds up to 100 percent, so she will surely be accepted at one or the other institution. Students explain why Fran may be wrong. If possible, students use a diagram in their explanation.* (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Understand and apply mathematical and technological concepts and skills by — applying the concepts and skills of geometry and measurement in describing the real world.	Students at All Grade Levels: • Understand the concepts of length, capacity, perimeter, area, volume, time, temperature, angle measure, weight, and mass. • Identify, describe, compare, and classify geometric shapes. • Visualize and represent geometric figures with special attention to developing spatial sense. • Represent and solve problems using geometric models. • Understand and apply geometric properties and relationships. • Estimate, make, and use measurements in problem and everyday situations. Students at Grades 8 and 12: • Select appropriate units and tools to measure to the degree of accuracy required in a particular situation. • Develop the concepts of rates and other derived and indirect measurements. • Develop formulas and procedures for determining measures to solve problems. • Use transformations to define and deduce properties of geometric figures. Students at Grade 12: • Classify figures in terms of congruence and similarity and apply these relationships. • Deduce properties of, and relationships between, figures from given assumptions. • Investigate properties of geometric figures represented on a coordinate system using both paper-and-pencil techniques and technological tools such as graphing calculators. • Apply trigonometry to problem situations involving triangles. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	For Example: 4th Grade: Students are given a variety of geometric shapes to explore. Using models, blocks, geoboards, and graph paper they sort and classify these shapes. Students identify as many different attributes of the shapes as possible. They construct models of these shapes from straws, make drawings, and create and manipulate given shapes on a computer screen. 8th Grade: Students create three figures with different shapes that have the same area as the given figure. They explain how they know their drawings have the same area as the original figure. 12th Grade: Students are given the following problem: *Imagine that you live on a flat world. The only way to move is through the coordinate plane. You are on a mission to capture a dragon that is threatening your village. If you can find out exactly where it is, you will be able to capture it. Other people in your village have already found out that the dragon does not lie farther north or east than (8,6). Other people who have seen the dragon have figured out that it is 4 units long and 1 1/2 units wide.* Students make up short stories that tell how they looked for the dragon by exploring the coordinate plane. Students tell where they think the dragon was found. Supply students with a sheet of coordinate graph paper. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's mathematics education, each student will be able to • Understand and apply mathematical and technological concepts and skills by — recognizing, describing, and generating patterns to identify mathematical relationships.	Students at All Grade Levels: • Describe, extend, analyze, and create a wide variety of patterns. • Represent and describe mathematical relationships. • Use technological tools such as calculators and computers to explore patterns. Students at Grades 8 and 12: • Describe and represent relationships with tables, graphs, and rules. • Analyze functional relationships to explain how a change in one quantity results in a change in another. • Use patterns and functions to represent and solve problems. • Understand the concepts of variable, expression, and equation. • Apply algebraic methods to solve a variety of real-world and mathematical problems. Students at Grade 12: • Represent and analyze relationships using tables, verbal rules, equations, and graphs. • Translate among tabular, symbolic, and graphical representations of functions. • Recognize that a variety of problem situations can be modeled by the same type of function.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

MATHEMATICS

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	For Example: 4th Grade (or 8th Grade): Students will be given the following problem: *Scientists have decided to beam this 99 chart out to all known stars and galaxies. They hope that space aliens will pick up and understand something about our world. Some of the scientists thought it would be a good idea to send patterns that can be found on the 99 chart. If someone gets the patterns and the 99 chart, maybe they will learn more about us.* 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 Students assist the scientists by finding a pattern that they would like to send into space. They can show any pattern that they think will help the space aliens learn something about us or our number system. Students circle the numbers in their pattern on the 99 chart. Students explain with words and pictures how they know that the numbers they circled show a pattern. They may show the pattern in another way than on the 99 chart on another piece of paper. Students explain why they chose their pattern and what they hope the space aliens will learn. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

MATHEMATICS

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: Students investigate what happens when different-sized cubes are constructed from unit cubes, the surface area is painted, and the large cube is then disassembled into its original unit cubes. Students find how many of the 1 X 1 X 1 cubes are painted on three faces, two faces, one face, and no faces. They explain how they found their solution. 12th Grade: Students are given the following problem: *Construct a square with sides of length 2 units. Connect the midpoints of the sides of the square, in order, to form an interior square. Repeat the same process to make five squares within squares. Write the sequence of numbers that represent the areas of the first five interior squares.* Students find the rule that can be used to find the areas of the **nth** interior square. Supply students with a sheet of coordinate graph paper.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Recommendations based upon the National Council of Teachers of Mathematics
Curriculum and Evaluation Standards for School Mathematics Copyright © 1989

Music

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

BEST COPY AVAILABLE

Standards-based EducationExamples

MUSIC

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands music terminology in relation to both aural and written aesthetic responses, recognizing a variety of styles and forms in relation to periods of (music) historical perspectives in both instrumental and vocal formats.	Appreciates and understands the role music plays in the creation of emotional and aesthetic works through musical concepts, styles, forms, and analysis and the changes brought from all historical periods. For Example: 4th Grade: Understands musical terminology, forms, and styles and their relationship to historical perspectives. Illustration: Contrast the difference between the Classical Period and the 20th Century and discuss some form and style differences. 8th Grade: Applies music concepts to personal and ensemble performances demonstrating comprehensive musicianship. Illustration: Discuss and evaluate performances and what music concepts have made that performance good or bad and what can improve the musicianship of the performers. 12th Grade: Creates musical examples for solo or ensemble that summarizes comprehensive musicianship and objective evaluative processes. Illustration: Evaluate performances and what music concepts have made that performance good or bad and what can improve the musicianship of the performers using music terminology.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes a wide range of career opportunities and available resources to access career development potential, and the skills necessary to develop interpersonal skills appropriate to successful work attitudes in such careers.	Demonstrates interviewing techniques, oral/writing skills, understanding of gained cooperation and teaming skills, ability to continue personal growth options, and gender equity potential in music. For Example: 4th Grade: Identifies career areas. Illustration: Recording technician, agent, composer, instrument manufacturer, sales person, or performer. 8th Grade: Identifies and recognizes talents and interests for career goals. Illustration: Discuss what is necessary to enter various music careers. 12th Grade: Evaluates potential for job opportunities in all related areas in music. Illustration: Study how musical experiences impact various career opportunities and good job habits.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based EducationExamples

MUSIC

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Develops personal ideas and feelings by utilization of elements, principles, memory, fantasy, and environment, and learns emotional properties of music as a communicative device using specific tempi, keys, modes, etc. that communicate ideas or emotions through a multitude of various voices or instruments.	The student will comprehend how music, as the "universal language," communicates to all peoples. For Example: 4th Grade: Identifies a thematic and evaluates the feelings that are emitted to the listener. Illustration: Vivaldi's Four Seasons or a movement of the Beethoven 6th Symphony (Pastoral). 8th Grade: Evaluates and analyzes music that depicts a specific feeling or attitude. Illustration: Berlioz's Symphonie Fantastique or Debussy's La Mer. 12th Grade: Composes or analyzes music that will communicate a specific feeling or emotion, discussing the properties of music nuances that communicate emotion and feelings. Illustration: How tempo or instrumentation colorings create moods.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based EducationExamples

MUSIC

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands how music performance, as a model that interacts positively with others, develops personal and interpersonal involvement and relationships through feelings and ideas expressed from performer to listener, and recognizes the "universal language of music" as a major human experience to all of humankind.	Develops shared working potentials within the performance arena and understands through individual performances, ensemble performances, and listening experiences. For Example: 4th Grade: Explores the meaning and understanding of music to all. Illustration: What is the cooperative impact of the individual to the section/ and the section to the ensemble. 8th Grade: Engages in individual and group interworkings to develop self-esteem, completion of tasks, dependency, and product completion. Illustration: How do you, as an individual, participate as a valuable member of the team (ensemble). 12th Grade: Assesses and appraises the level of contributions of works to human history by relating premise to themes. Illustration: Discuss Beethoven's 5th Symphony (Eroica) and his concept of Napoleon as a political figure; or Stravinsky's Sacre du Printemps as a social and political statement.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

MUSIC

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes a broad perspective of artistic development through universal understanding of multi-cultural/ethnic (African-American, Asian-American, Hispanic American, and Native American) contributions and differences that reflect on individual musical heritages with those of others, and applies ethnic contributions to the development of pride and high self-esteem for all ethnic groups and individuals.	Identifies the many cultural differences that have impacted individual musical heritages and the ethnic (African American, Asian American, Hispanic American, and Native American) contributions that provide for the development of pride and high self-esteem for all ethnic groups and individuals. For Example: 4th Grade: Participates in playing and listening to music of own and others' ethnic groups. Illustration: Experiment with ethnic instruments (maracas, kalimba, Indian wind flute, koto). 8th Grade: Discusses the purposes of various music and develops time-lines highlighting individual music heritages comparing his/her own heritage with those of others. Illustration: The impact of African-American thematics on Dvorak's New World Symphony or the works of Carlos Chavez and its Mexican idioms. 12th Grade: Analyzes or compares the social influences of music and the contributions of ethnic groups to the development of music through all historical periods. Illustration: The development of the jazz movement from Negro Spiritual to current jazz and rock idioms.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: PHYSICAL / EMOTIONAL / MENTAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Develops a means for providing a broad range of emotional and physical experiences by using music as a tool for development of emotional or physical expression.	Recognizes and values the importance of music as an indicator of the human condition, both for the individual and the masses. For Example: 4th Grade: Describes music that tells a specific story or develops an emotional feeling. Illustration: Rossini's William Tell Overture and its use in the media (movies, TV, advertising). 8th Grade: Composes or analyzes music that expresses a specific (or many) emotions. Illustration: Use dynamics, nuances, and tempo for voice or instrument to create moods and feelings. 12th Grade: Devises a story line with appropriate physical/emotional musical responses and keeps a portfolio with specific examples of emotional conditions (both self-composed and composed by others).	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based EducationExamples

MUSIC

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Expresses appreciation for high quality written and performed music and analyzes what constitutes quality of performance and composition.	Listens to quality musical literature and evaluates, reviews and justifies performance/ composition of musical examples through analyzation of composition, style, form, and aesthetic formats. For Example: 4th Grade: Summarizes the nature and composition of musical examples. Illustration: Use music terminology to contrast Mozart and Alban Berg. 8th Grade: Evaluates musical performance for structure, style, quality, and aesthetic value. Illustration: Why does a performance create interest or boredom. 12th Grade: Establishes rationale for improvement of musical performance and meaning, as well as a full critique of examples. Illustration: How is quality of performance achieved and what would improve that quality?	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

MUSIC

Outcome Category: SCIENTIFIC / TECHNOLOGY DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrates a working awareness of technological and scientific development in music by developing new technologies and techniques in current formats of music composition and performance.	Demonstrates skills in using technological equipment and accesses and compares information from computer and other new forms of electronic musical technology and scientific development. For Example: 4th Grade: Uses technology to present creative musical ideas. Illustration: What role does the computer have in music (MIDI, synthesizer, electronic keyboard)? 8th Grade: Demonstrates how technology develops innovative musical ideas. Illustration: Use the electronic keyboard to create new sounds and moods. 12th Grade: Evaluates and describes how contemporary music forms, styles, and formats impact current trends in scientific and technological development. Illustration: Use the compact disk and laser technology to investigate new advancements in music technology.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Physical Education

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

PHYSICAL EDUCATION

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will recognize the value of visual and performing arts activities as a means of providing physical development and well-being.	4th Grade: • The student will demonstrate qualities of movement through exploring and improvising; observing dances, games, and activities performed by others; and indicating likes and dislikes about specific movements. • The student will perform to selected musical pieces and understand the value of rhythm to physical movement, i.e., waltz, march, cha cha, clogging, line dance. 8th Grade: • The student will view a videotape of ballet, folkloric, or an African American dance troupe and write feelings in a personal journal. 12th Grade: • The student will appreciate the inherent beauty of skillful human movement, i.e., collecting photos or videos of professional athletes and dancers. • The student evaluates elements of form by critiquing the aesthetics in a dance concert, a gymnastic meet, etc.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

PHYSICAL EDUCATION

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Student will comprehend the importance of selecting and participating in a health-related lifetime physical activity.	4th Grade: • The student will name the five health-related fitness components and an occupation matched to each component. 8th Grade: • The student will design a fitness program in a personal log to suit his/her individual needs. 12th Grade: • The student will plan a lifetime fitness program to include all five health-related fitness components.	(To be developed: Excelling, Proficient, In Progress)
Student will recognize that wellness involves more than being physically fit.	4th Grade: • The student will portray, in a journal, the importance all aspects of wellness have on his/her own personal life. 8th Grade: • The student will design a health portfolio which exhibits the benefits of physical, social, and emotional health. 12th Grade: • The student will interview two professionals in the health-related occupations (physical therapist, orthopedic surgeon, nutritionist, etc.) and report findings to the class or a small group.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

PHYSICAL EDUCATION

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Student will recognize the role regular physical activity plays toward the pursuit of life-long health and well-being.	4th Grade: • The student will record fitness test scores with personal improvement goals. 8th Grade: • The student will attend a health fair that displays drug-free, tobacco-free, and stress-free exhibits and report back to classmates what was learned. 12th Grade: • The student will record in a personal journal the importance or benefits that movement, dance/rhythms, sports/fitness have on his/her physical, emotional, and social health. The journal could contain poetry, quotations, illustrations, photographs.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

PHYSICAL EDUCATION

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will understand the risk and safety factors associated with regular participation in physical activity.	4th Grade: • The student will verbally describe and perform a sit-up without causing injury to the lower back. 8th Grade: • The student will demonstrate the proper sequence to be used for first aid with a sprained ankle. 12th Grade: • The student will write a paper or produce a videotape or audiotape explaining how proper warm-up, cool-down, and conditioning can assist with injury prevention.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

PHYSICAL EDUCATION

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will acquire competence in combinations of manipulative, locomotor, and non-locomotor skills.	4th Grade: • The student will perform a "dos-a-dos" and an "allemande left" with his/her partner on teacher command. 8th Grade: • Students will teach the class a folk dance from a country of their choice, and will explain the culture of the dance. 12th Grade: • The student will adapt a popular game, such as soccer, so that it can be played by handicapped individuals.	(To be developed: Excelling, Proficient, In Progress)
The student will identify the personal and economic benefits to society associated with regular participation in physical activity.	4th Grade: • The student will explain to a classmate four ways that their parents can exercise and live longer lives. 8th Grade: • The student, in a cooperative group, will estimate how much money the average consumer could save in insurance premiums and taxes if every American would exercise at the proper intensity and duration three times a week. 12th Grade: • The student will design a fitness program for his/her best friend and will contract with this friend for support and motivation for one semester.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

PHYSICAL EDUCATION

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will know the rules, strategies and appropriate behaviors for selected physical activities.	4th Grade: • The student will articulate what the penalty is in soccer or basketball for running into a player who is shooting the ball. 8th Grade: • The student will participate in a modified game of basketball in which each player on the team touches the ball before it is shot at the basket. 12th Grade: • The student will umpire a softball game between Team A and Team B and will exhibit sound, fair judgment in calling balls, strikes, safes, or outs.	(To be developed: Excelling, Proficient, In Progress)
The student will appreciate the relationships with others that result from participation in physical activity.	4th Grade: • The student will participate on five different jump rope or floor hockey teams in one semester. 8th Grade: • The student will participate in a New Games cooperative problem-solving game with 10 other students and record what was learned in a fitness journal or log. 12th Grade: • The student will create a report card for team members regarding each member's contributions during the New Game/cooperative game.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

PHYSICAL EDUCATION

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will recognize that participation in physical activity can lead to multi-cultural and international understanding.	4th Grade: • The student will perform simple, international, ethnic, historical, or contemporary dances, games, sports, with cues given by the teacher . • The student will hear a story about Native American lacrosse and guide a ball or puck with a stick in a gym or on a field. 8th Grade: • The student will recall and perform a dance/game/sport learned earlier. • The student will execute basic steps to folkloric rhythm. 12th Grade: • The student will perform or diagram folk dances from African American, Asian American, Hispanic American, and Native American cultures.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

PHYSICAL EDUCATION

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Student will demonstrate competence in a variety of physical and emotional skills.	4th Grade: • The student will record on his/her fitness chart personal achievement on all the basic manipulatives (overhand throw, kick, strike, etc.), locomotor (run, hop, skip, jump, slide, etc.), and stability (balance, inverted balance, rolls) skills. 8th Grade: • Student will keep a journal for one semester recording accomplishments in stress management, nutrition, cardio-vascular functioning, and substance-free living. 12th Grade: • Student will interview a senior citizen or a parent and develop and monitor this person's fitness goals for three months.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

PHYSICAL EDUCATION

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will learn how to develop new skills.	4th Grade: • The student will analyze the school building schematic and write a Tornado Safety Policy for the school. 8th Grade: • The student will produce transparencies explaining a two-hour hike for the class from start to finish ensuring the health and safety of all classmates. 12th Grade: • The student will design and display an orienteering course and appropriate map for orienteering competition.	(To be developed: Excelling, Proficient, In Progress)
The student will assess, achieve, and maintain an appropriate level of physical fitness.	4th Grade: • The student will demonstrate three exercises to be used to improve cardiovascular endurance. 8th Grade: • The student will design and monitor a basic exercise plan on computer software to improve cardiovascular endurance specifying an appropriate range of intensity, duration and frequency of exercise. 12th Grade: • The student will adapt a basic cardiovascular endurance program in terms of intensity, frequency, and duration to accommodate the condition and/or goals of a special needs individual (i.e., pregnant, recovery from illness, wheelchair).	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

PHYSICAL EDUCATION

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
The student will formulate safe, personal fitness programs in accordance with principles of training and conditioning.	4th Grade: • The student will role play an aerobics teacher warming up and cooling down three students. 8th Grade: • The student will analyze weight-training apparatus and explain to a peer how six machines affect specific muscles. 12th Grade: • The student will design and conduct a scientific experiment to determine which therapeutic modality (i.e., ice, hydrotherapy, message, heat) would assist a broken bone recovery.	(To be developed: Excelling, Proficient, In Progress)
The student will apply concepts and principles to the development of motor skills.	4th Grade: • The student will demonstrate the different motions and muscles involved with throwing a ball for distance vs. throwing a ball for height. 8th Grade: • The student will illustrate or diagram the difference in throwing motions between different objects (i.e., baseball, basketball, frisbee, shot-put, javelin). 12th Grade: • The student will explain and illustrate on an overhead or chart paper the effect of angle of release and force of throw to the resulting trajectory of the projectile.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Science

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

BEST COPY AVAILABLE

SCIENCE

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognize the role science plays in the aesthetic and creative development of discoveries and contributions of the scientific process.	4th Grade: • Explore contributions and discoveries of scientists and how aesthetic creativity impacts such contributions and discoveries, i.e., the phonograph and the VCR. • Demonstrate a creative attitude of interest, excitement, and inquiry about the beauty of the world, i.e., the beauty of the star system. For Example: • Read a biography of a famous scientist such as Pasteur, Thomas Edison, George Washington Carver, Marie Curie, and illustrate, dramatize, etc. the creativity of the scientific inquiry process. • Design and carry out an experiment related to the study of waves of sound of a simple musical instrument. • Design a poster or build a model displaying the contribution of a scientist or a scientific discovery. • Draw a dinosaur or prehistoric animal to scale (this can be done with chalk on a hardtop area); discuss the size, diet, environment, habitats, and enemies of these animals. • Make paintings, drawings, or photographs of the shapes and shades of color when sunlight and shadows can be seen on an object. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SCIENCE

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Understand that science embodies creative processes, knowledge, and technologies with which we can understand the beauty of the everyday world, i.e., the changing seasons and photosynthesis. • Understand that science is a way of knowing, creating, and experiencing the beauty of the world around us, i.e., patterns created by wind and water erosion. • Understand that science incorporates processing and thinking skills which include but are not limited to asking questions, identifying problems, interpreting data, creating, identifying alternative solutions, assessing the risks and benefits of the solution. • Demonstrate an appreciation of the joy of scientific discovery and creation. For Example: • Map a time-line of breakthrough scientific discoveries, i.e., sound amplification for audiences. • Experience a laboratory experiment with a high probability of an "aha" experience. • Analyze everyday inventions for scientific principles they utilize, i.e., camera, tape player, electric guitar, laser disk. • Scan the local newspaper for articles concerning current recording and listening technologies (i.e., digital tape, laser disc, CD). • Propose or invent something new. Write a news article or prepare a video about your invention. • Compare the inter-relatedness of the solar system, architectural structures, artifacts in nature, etc. with their spatial orientations. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Understand how science explains, predicts, and contributes to aesthetic and creative development. • Understand that science is a way of knowing and can not completely answer all questions. • Understand that science requires evidence and is unbiased. • Understand how the history of science has affected human development through the creative and aesthetic process. • Understand how the creative and aesthetic contributions of scientists have contributed to current scientific knowledge. • Develop an appreciation for science using aesthetic tools as a form of scientific expression. For Example: • Work with the tools of science and determine how senses have limited the understanding of the natural world. • Create an investigation of the student's own design and develop new questions as a result of this experiment. • Conduct a history of space exploration and dramatize, write a poem, write a song, make a video about the discoveries. • View NASA films; make prototype models of what was observed. • View the videotape series titled "Connections." Discuss and write about the connections of technological influences in the environment. • Discuss how scientific knowledge evolves or is modified. • Follow a concept such as geocentrism to show how it had changed based on evidence. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	• Hold a scientific convention; use posters and slogans to advertise and to attract visitors. • Have students present data from their experimentation and defend their scientific position. • Visit industry and research laboratories such as Martin Marietta's Failure Analysis Lab, Ball Aerospace, Solar Energy Research Labs, Bureau of Atmospheric Research Labs, etc. Investigate the future career choices available. • Investigate important historical scientists and present a role play presentation of their discoveries in class (i.e., Pasteur, Einstein, Rutherford). • Analyze discrepant events and hypothesize explanations. • Ask students to imagine that they can isolate one atom of an element. What possibilities of new technologies can they describe based on this assumption. • Design modifications for toys used on Earth to be used in the microgravity environment of space (slinky, gyroscope, yo-yo, wind-up toys, paper planes, etc.). • Using natural dyes such as onion skins, red cabbage, blueberries, design and tie dye cloth or tee shirts; investigate the chemistry of the colors produced. • Interview a practicing scientist to find his/her methodologies, processes of investigation, etc.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SCIENCE

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrate an understanding of the impact of science and technology on everyday living and future career choices.	4th Grade: • Discuss inventions that have been made to benefit humankind. What has been improved with these inventions? • Explore the impact of technology on future career choices. • Predict future innovations in science and technology. For Example: • Develop a class timeline to show worldwide inventions. • Write a scenario describing a job that utilizes future science and technology to benefit humankind. • Draw or construct an invention that would benefit people. • Invite a visiting scientist to school to discuss career choices. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Demonstrate an understanding of everyday science and technology that was unavailable to previous generations. • Research the technological skills necessary for different careers. • Predict changes that science and technology will have on future careers. For Example: • Conduct a technology survey from members of the previous generation (senior citizen home, grandparents, etc.). • Visit a science museum, planetarium, research lab. • Invite visiting scientists (especially women and minorities as role models) to describe the technology of their occupations. • Write a story about life in the year 2010. What would schools be like in that year? • Conduct a household search for technologies that parents did not have in their home when they were the same age as the students in the class. • Visit technology-oriented businesses. • Try surviving 24 hours without using anything that runs on electricity; share, report, discuss, etc. • Participate in team activities such as Science Olympiad, Odyssey of the Mind, Invention Convention, etc. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Understand cause and effect relationships. • Understand the use of technology in solving problems. • Demonstrate a knowledge of present and future science, health, and technology-related careers. • Devise an invention that accomplishes a task. For Example: • Engage in career awareness activities such as career day; reports; guest speakers; visits to business, industry, and research laboratories. • Integrate technology tools into all parts of the curriculum. • View and analyze film and videos dealing with the future (i.e., Future Shock, Connections, 2010, A Space Odyssey). • Investigate one area of industry over the last 25 years and study the impact of science and technology (i.e., radio/television, automobile, space travel, plastics and polymers, cameras, etc.). • Participate in group activities as Science Olympiad, Bridge Building Contests, Odyssey of the Mind, Invention Convention, etc.). • Invite an inventor to give a presentation including the process of patent application. • Host an all-school health fair to learn more about health-related careers. • Establish student internship programs (i.e., work with a veterinarian, summer research in a medical lab, work at a water treatment facility, work in a nursery greenhouse, etc.).	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Apply and integrate basic skills from other subject areas (reading, social studies, math, etc.) to science, health, and technology.	4th Grade: • Select and read appropriate fiction and non-fiction to topics in the curriculum. • Interpret and restate opinions and findings orally to the class. • Prepare effective written communication related to science class activities. • Use mathematics to analyze studies and experiments conducted in science. For Example: • Keep a journal about observations on seed growth, personal health, health practices, weather, etc. • Give oral group summary reports following an inquiry lesson. • Graph data collected from a survey on health practices, observations of pendulum motion, weather patterns, etc. • Suggest reading: Where Bald Eagles Gather, The Midnight Fox, Scholastic News Magazine. • Have students make paper planes according to their own design; make a class graph showing the distances flown; discuss the results of the graph with the design. • Adopt a tree in the nearby area of the school. Present a short story, puppet show, or play about the life of that tree. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Add, subtract, multiply, and divide integers, fractions, decimals appropriate to manipulations of scientific data. • Locate, identify, analyze, summarize, and communicate appropriate sources of scientific information. • Identify the social climate responsible for advancements in technology. For Example: • Calculate the average of a set of data; summarize data in graph form; apply principles of rounding off numbers, and of significant figures; use scientific notation. • Have the students participate in activities such as Project Wild's Oh Deer! which uses description, discussion, generalization, kinesthetic concept development, observation, and psychomotor development. • Organize chronologically the technology inventions on a timeline. • Identify scientific contemporaries in various occupational fields. Interview a local scientist and report to the class.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

SCIENCE

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Identify the main ideas in scientific readings giving supporting evidence and subtopics. • Write a short science report and/or laboratory write-ups and/or creative writing assignment related to science. • Calculate, graph, and interpret scientific results. • Read literature concerning science, health, technology, and critique using fundamental concepts of science. • Use measurement instruments accurately. • Demonstrate historical knowledge impacting science, health, and technology. For Example: • Plan an investigation or an experiment. Keep in mind when designing the experiment: are the variables appropriate, independent, and measurable; are controls included; what data will be collected; will the results be analyzed statistically; are materials available; are there safety and environmental concerns? • Read novels relating to science (i.e., The Black Cloud, Mutation, The Andromeda Strain, etc.) and evaluate the scientific information. • Complete a scientific library search. • Investigate the physics of music, the chemistry of cooking in the kitchen, or the science in art, medicine, or folklore. • Research new scientific discoveries (i.e., cold fusion, new elements on the Periodic Table, genetic mutations, etc.) and discuss the inter-relatedness of the science concepts involved in the discoveries. • Construct concept maps to illustrate relationships between scientific information. • Study the relationship between human physiology and sports performance. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	• Learn how scientific organisms are named. Create a futurist animal and give it an appropriate genus and species name. • Utilize hands-on, minds-on math/science integrated units (i.e., GEMS: Great Explorations in Math and Science; AIMS: Activities in Math and Science, etc.). • Consider and discuss the reasons for chemical pesticides, hazardous wastes, etc. What are the trade-offs? What are some of the consequences? What are some of the alternatives? What is the current research in this area? Check newspapers and periodicals for local and national examples of such issues. • Investigate the physics of dance by studying the motion and forces involved in this form of communication.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Apply successful strategies in the process of individual and group problem solving.	4th Grade: • Identify a question or a problem. • Define variables and devise a procedure for testing. • Carry out the testing procedure. • Evaluate the conclusions and communicate the results. For Example: • Develop and perform an experiment to determine the factors which affect plant growth, what effect do various acids have on teeth, or what paper towel is the most absorbent, cost effective, strongest, etc.. • Incorporate programs which will feature gardening, or clean-up campaigns, the care of animals, etc. • Plan a nature trail book whereby the students chose the area around the school grounds to study; the development of individual and group environmental interaction, knowledge of our dependence on the environment, and an awareness of our environmental responsibilities are stressed. • Work in a cooperative group to solve a problem. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Demonstrate skills necessary for working successfully within a group. • Identify problem-solving strategies responsible for inventions such as trial and error, brainstorming, lateral thinking, serendipity, etc. • Design, organize, describe an experiment to solve a problem. • Accept and involve special needs children into group activities. For Example: • Build a structure from construction paper to support a given mass. • Work with a group to build a wind crane. • View the film Trial and Error. • Do group activities where each member of the group receives information necessary for group success • Get involved in a community clean-up project. • Experience: blindness for a day; deafness; lack of mobility. • Start a recycling center at school. • Discuss the finite resources of the earth (i.e., demand for minerals, fuels, metals, woods, etc.); organize solutions for resource problems describing the role of government, industry, schools, and citizens. (Continued)	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Demonstrate the ability to discuss scientific issues within groups. • Ask questions and formulate hypotheses which can be tested experimentally. • Design an experiment as a result of group problem solving activities. • Cooperate with parents, school, and community groups to identify and problem-solve school and community issues. For Example: • Communicate results using video, music, artwork, computers, etc. • Conduct group classroom presentations to explain and summarize the results of group experiments and problem-solving activities. • Organize student panel discussions relating to global concerns. • Participate in programs which emphasize team problem-solving (i.e., Science Olympiad, etc.). • Plan and implement an all-school recycling program or a community clean-up day. • Plan an all-community Earth Day, Chemistry Day, or Arbor Day, etc. celebration. • Prepare a local area adjacent to the school for a handicapped trail. • Plan a demonstration xeriscape area at school for public display. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SCIENCE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Apply knowledge to make informed decisions that are personally, socially, and environmentally responsible.	4th Grade: • Develop a list of alternative solutions for a decision. • State the consequences of alternatives regarding self, others, and the environment. • Develop a personal plan for following through with the decision. For Example: • Create a list of possible breakfast cereals or dinner menus and decide which would be better choices for students to eat. Discuss the personal, social, and environmental consequences of eating each cereal or menu (nutrition, cost, disposal of package, etc.). • Explore other topics on shared responsibility such as conservation of fuel, recycling, overuse of paper products, lifetime sports involvement, etc.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Standards-based Education Examples

SCIENCE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Given a personal, social, or environmental issue, utilize scientific information to support alternative viewpoints. • Understand the consequences of making decisions that are not responsible. For Example: • Investigate the biodegradability of paper and plastic, and decide which is best. • Investigate the effects of a nuclear accident such as Chernobyl. • Investigate air pollutants from auto emissions. • Analyze the contents of the school dumpster. • Research such topics as the thalidomide tragedy, Valdez oil spill, or ozone hole. • Discuss the pros and cons of science-related ballot issues. • Research the use of drugs, alcohol, etc. on the human body. (Continued)	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Understand the relationship and impact between men and the global environment. • Apply decision-making models to environmental problems. • Understand the relationships between technology and science where technology is a means by which society develops and advances. For Example: • Conduct a simulation to decide where to put a toxic waste facility (i.e., ChemCom materials). • Study the impacts of technology on the environment (i.e., acid rain, rain forest destruction, toxic waste disposal, greenhouse effect, etc.). • Start a school-wide recycling program for waste minimization. • Analyze packaging material and devise an experiment to test decomposition rates. • Investigate urban wildlife found near the school location. • Set up long-term study plots in a variety of environments and monitor the changes over time. • Collect and analyze air samples within and surrounding your school; relate this information to Colorado air pollution problems and current acid rain concerns in the Rocky Mountain National Park. • Prepare a panel of students to debate the ethical use of laboratory animals for experiments. • Check the water quality of all the sinks and water fountains, or nearby streams and rivers, using qualitative analysis techniques.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SCIENCE

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrate an understanding of multicultural contributions to science, technology, and health.	4th Grade: • Understand that diversity is a basic building block of nature and is essential for natural systems to survive. • Identify contributions that various cultures have made to science, health, and technology, especially women and men of Arican American, Asian/Pacific Islander, Hispanic American, and Native American/Indian descent. • Analyze and evaluate the positive and negative effects of scientific advances on various cultures. For Example: • Explore and investigate a pond for the diversity of animals and plants existing there; study the life cycles, feeding patterns, habits of the organisms living there. • Research, discuss, build models, etc. about the various scientific contributions made by the early Egyptians and the Aztec cultures; investigate how their beliefs were tied to their culture, and how they apply to everyday living situations in our communities. • When investigating the westward expansion movement in the United States, study the impact on the environment and on the Indian tribal products. • Explore through current events a recent environmental problem caused by technology that affects other cultures (i.e., Kuwait oil fires, depletion of the rain forests in South America, etc.). • After studying about soils, volcanos, earthquake conditions, or drought, investigate the effects of these on human cultures; brainstorm possible uses of science and technology to impact conditions. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Demonstrate how many different cultures have contributed and continue to contribute to science, technology, and health. • Compare ways of solving problems in different cultures with different world views. • Identify the value and use of science, technology, and health with different cultures. • Demonstrate the cultural setting of major breakthroughs in science, technology, and health. For Example: • Along with the study of flight, jet travel, and rockets, include the contributions of African Americans, Oriental, Hispanic, etc. in the history of aviation (i.e., Eugene Bullard, a black fighter-pilot in World War I, NASA astronauts, etc.). • Study about Jenner's research and then debate whether each individual in the class would have volunteered to be inoculated with small pox. • Role-play great moments in science and design a time-line depicting the discoveries over time including minority and female scientists. • Analyze statistics on disease mortality, life expectancy, and population growth for the U.S. and other countries. • In the study of oceans, fish, and other aquatic life, investigate the impact of fishing and ocean harvesting on nearby cultures (i.e., Eskimo, Northwest Indian tribes, etc.). • Compare and contrast the development of mass transportation in the U.S. and other countries. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Show how different cultural attitudes have impacted science and society. • Identify the significant contributions of cultural minorities. For Example: • Identify prominent minority scientists and assess their impact and contributions to society (i.e., George Washington Carver, Luis Alvarez, LaSalle D. Lefalle the cancer researcher, Walter Massey the theoretical physicist at Argonne National Labs, etc.). • View the video and discuss the book Black Wings: The Black American in Aviation. • Determine the significance of gunpowder in the Chinese culture as compared to western cultures. • Survey ten typical science texts for the inclusion of women scientists. Discuss possible reasons for the lack of women in science, technology and health career fields. • Investigate the social, political, and cultural issues in solving environmental problems (i.e., rain forest depletion, etc.). • Study and report on any large drug corporation that is based internationally (ask for their annual report); look at the international aspects. • Research/report on Nobel Price winning ideas; focus on how information was gathered and modified to produce results.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrate a knowledge of the benefits of healthy behaviors for self and others.	4th Grade: • Discuss the effects of substance abuse. • Develop a plan and practice the use of refusal skills. • Execute a plan for actively promoting healthy behaviors. For Example: • Discuss the effects of the use of tobacco, alcohol, and abused substances. • Role-play and simulate actual situations using refusal skills. • Write letters to tobacco companies; enter poster contests; write articles for newspapers regarding healthy behavioral choices. • Invite the physical education instructor to explain about exercise and healthy bodies. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Incorporate scientific data to develop healthy habits and attitudes. • Demonstrate an understanding of the personal and social consequences of un-healthy behaviors. For Example: • Analyze diets over a 24 hour period and discuss the importance of balanced nutritional intake. • Measure beneficial physiological changes associated with exercise. • Compare life expectancies of different groups (i.e., racial, ethnic, age, socio-economic, etc.). • Use computer software that simulates the effect of alcohol abuse. • Talk with a recovering alcoholic/drug abuser (preferably a teenager). • Write a news story about a success with refusal skills. • Take part in a specific exercise program. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Understand the basic functions of the human body. • Understand the relationship between the environment and human health. • Understand how the body is affected by drugs, alcohol, foods, and any other introduced chemicals. • Demonstrate an understanding of healthy and unhealthy behaviors and the societal impacts that result. • Understand what constitutes the difference between use and abuse relating to human health. For Example: • Plan for guest speakers; panel discussions; school health fairs; selected readings on the origins and use of toxic chemicals. • Promote the formations of peer groups (i.e., SADD, Just Say No, etc.). • Investigate current medical developments in biotechnology, genetic engineering, immunology, etc. • Analyze labels on food products and compare nutritional information. • Conduct consumer experiments comparing taste, cost, and nutritional benefits of the products. • Analyze the labels on over-the-counter cold remedies. Determine what the active ingredients are and how they function in the body. • Compare the nutritional value in fast foods. • Calculate the ideal body weight and percentage of body fat. • Have a presentation by a sports trainer discussing the pros and cons of exercise pro grams. • Visit the Olympic Training Center. • Investigate the use and abuse of steroids by athletes. • Show the film, "The Shawn Marcy Story," to discuss the hazards of smokeless tobacco.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrate knowledge and use of the scientific concepts of organization, cause and effect, systems, scale, models, change, structure and function, variation, and diversity to solve problems in science, health, and technology. Demonstrate an understanding that the generation of scientific knowledge depends upon the inquiry process and upon conceptual theories.	4th Grade: • Demonstrate and actively use the scientific processes in classroom activities. • Describe and apply the phenomena of physical science, earth science, life science, and health. • Apply the use of technology related to the science studied. • Find patterns and classify natural occurrences. For Example: • Observe, explore, classify, investigate, compare, infer, measure, predict, formulate a hypothesis, record data, analyze data, graph data, communicate data, control variables. • Encourage students to look for and classify patterns in nature (i.e., snowflakes, crystals, flowers, leaves, etc.). • Describe the pendulum motion, digestive system, rock classification, etc. • Discuss the uses of machines and appliances that affect our lives. • Observe and describe changes in the properties of matter when it boils, melts, evaporates, freezes, condenses (i.e., water). • Investigate structure and function by inferring what a mammal eats by studying its teeth or what a bird eats by studying the structure of its beak. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Demonstrate relationships among variables associated with a concept. • Develop an analogy or a model to demonstrate an understanding of a concept. • Demonstrate measurement skills and use of appropriate units associated with a specific concept. • Explain the differences among observations, theories, and laws associated with a concept. • Demonstrate the use of the scientific processes in classroom activities. For Example: • Interpret scale drawings by constructing an object. • Find mass, volume, density of regular and irregular objects; of givens and unknowns. • Construct a model of an atom and discuss why it is just a model. • Describe the earth as a living organism. • Use an ecosystem such as a terrarium to illustrate cycles. • Measure boiling points/freezing points of unknowns; graph the temperature vs. time.. • Investigate evidence for the theory of continental drift, theory of evolution, etc. and demonstrate an understanding using concept mapping. • Using a series of clues about a scientific mystery, formulate hypotheses, design and conduct experiments, draw conclusions, arrive at decisions based on the conclusions (i.e., GEMS program "Crime Lab Chemistry"). (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Demonstrate an understanding of process skills to include conducting experiments, controlling variables, problem-solving/decision-making, analyzing, synthesizing, and applying. • Understand that technology uses science and contributes to it. For Example: • Design and conduct experiments using simple, multiple, independent, and dependent variables. • Prove or disprove a science concept (i.e., Boyles Law, Charles Law, etc.). • Conduct controlled experiments. • Discuss failure analysis and controls involved in new technologies. • Forecast the weather for four consecutive days for a 12-hour period for the local area by applying meteorological knowledge, models, weather maps from various levels of the atmosphere, etc. • Distinguish between fact, hypothesis, and opinion. • Analyze the steps in the decision-making process, then tackle a problem in your community (i.e., should Waldo Canyon in the Colorado Springs area be opened to mining?).	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: SCIENTIFIC / TECHNOLOGICAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrate a positive inquisitive attitude in dealing with real world scientifically-related problems. Demonstrate a knowledge of reliable sources of scientific and technological information and use these sources in the process of decision-making. Demonstrate an ability to recognize, evaluate, and adapt to changes in science, health, and technology.	4th Grade: • Demonstrate an awareness of current changes in science, health, and technology. • Discuss ways to deal with change. For Example: • Read and summarize science-related articles in magazines and newspapers. • Interview parents, grandparents, senior citizens about changes in transportation during their lives and how it has affected them. • Discuss the consequences of advances in transportation. • Discuss how people are adapting and will adapt to changes in transportation. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: SCIENTIFIC / TECHNOLOGICAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Demonstrate the ability to use library and media research skills. • Identify the main idea of a scientific report. • Demonstrate computer skills necessary to access, store, and manipulate scientific information. • Understand that change is continuous in the natural world. • Understand that the rate of change can vary. • Understand that, as new problems arise, the technology will change. For Example: • Do a research paper individually or as a group project. • Summarize scientific articles in appropriate magazines and journals. • Process information using a computer. • Use computers to analyze laboratory data. • Identify changes in an ecosystem when something new is added or something is removed. • Investigate different life cycles. • Differentiate between linear and exponential growth. • Estimate the rate and direction of change in a physical or living system. • Identify the major shifts in scientific thinking since 1950 (i.e., Continental Drift, dimensions/components of the Universe, etc.). • Give examples of changes over time in science, health, and technology (a chronological time-line). (Continued)	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SCIENCE

Outcome Category: SCIENTIFIC / TECHNOLOGICAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Recognize and describe three categories of change as steady change, change cycles, and irregular change. • Understand how change as a process allows for the modification and prediction of future environments. • Recognize the impact of the rate of change within the environment. • Understand how society copes with an ever-changing world. • Use strategies of technology assessment whereby an investigative-student-developed solution enhances problem solving. • Research information and extract useful concepts. • Demonstrate computer literacy. For Example: • Study examples of change such as Circadian rhythms, evolutions, radioactive decay, chaotic systems, energy changes, etc. • Report on how life would be different if the student were born 30 years ago or 30 years from now. • Read the book, *Future Man*; design an animal of the future and describe its habitat, adaptations, and survival techniques. • Study species extinction rates and man's influence on habitat loss. • Demonstrate dynamic equilibrium and relate change to the global experiment. • Read about the Gaia Hypothesis; learn how earth systems modify and change themselves. • Use current computer technology to access information. • Have students prepare a lesson using interactive video systems. • Use library resource materials to prepare a group report on current issues in science, health, or technology. • Survey local supermarkets or hardware stores for chlorofluorocarbon-propelled aerosols and organize task forces to estimate the economic effects of a ban on these chemicals.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Second Language

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

SECOND LANGUAGE

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrates knowledge and appreciation of the arts, recreation, intellectual pursuits, and accomplishments of target (language being studied) culture(s).	• Explores contributions and discoveries of creators and thinkers in the target culture(s): • Reads and discusses target works of literary merit; attends target plays, sporting events, poetry readings and lectures; listens to newscasts; identifies and discusses target works of art, buildings, monuments, musical works, and dance forms; interprets humor, statistical and graphic data, newspapers, gestures, music, and dance; engages in leisure activities pursued by target culture. • Travels to target language country, invites native speakers to home, sustains pen pal relationships. • Reads, discusses, performs, interprets, writes, plays, role plays culturally authentic examples of aesthetic experiences in the target culture; and creates, e.g., draws, designs, composes, performs, constructs original works to demonstrate knowledge of the target culture.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Demonstrates an understanding of the impact of knowing other languages on everyday living and future career choices, and demonstrates an awareness of the opportunities for study that exist in target countries.	• Uses target in classroom and at work when appropriate. • Participates in co-curricular activities in target culture. • Conducts surveys of community members. • Writes about the future. • Interacts with guest speakers. • Travels to country where target is spoken.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands, speaks, reads, and writes the language being studied (target); and demonstrates competence in using the language.	• Creates with the language by combining and recombining learned elements: initiates, minimally sustains, and closes basic communicative tasks, and asks and answers questions. Joins sentences in simple discourse of at least several paragraphs in length on familiar topics. • Understands main ideas and most details of connected discourse on a variety of topics beyond the immediacy of the situation, reads simple connected texts dealing with basic personal and social needs, and writes routine social correspondence. • Participates in face-to-face interviews, conversations; listens to culturally authentic humor, short routine telephone conversations, simple announcements, and media reports; role-plays with peers, native speakers, guests, teacher, etc. • Reads authentic simple short stories, news items, bibliographical information, humor, social notices, personal correspondence, routinized business letters, and simple technical material; and writes social correspondence, takes notes, writes cohesive summaries and resumes, narratives, descriptions of a factual nature.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Makes sound decisions based on understanding of own and other cultures and a holistic view of the world and its interrelatedness, and understands target geopolitical situation.	• Works well individually and in groups; accepts responsibility for actions in own and target culture simulations. • Learns about common human endeavors and problems through target culture; researches questions of democracy, ecology, etc. through target culture; shares knowledge in variety of culturally authentic formats. • Makes policy decisions with peers and teacher re: curriculum, progression, focus, classroom / school norms; and understands why students proceed according to performance assessment rather than seat time.	(To be developed: Excelling, Proficient, In Progress)
Demonstrates objectivity in viewing own culture and values.	• Understands concept of cultural norms. • Works cooperatively with classmates to create a pleasing psychological space in the classroom; learns to encourage others through examples of encouragement in class.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Accepts the existence of different cultures and recognizes the value of other cultures and subcultures in the United States.	• Learns culture through language; becomes aware of differences in target culture, accepts target and other reactions as part of the commonality of the human experience,. • Interacts with members of the target culture in the United States and in other countries and uses a variety of culturally authentic print and non-print materials to evaluate cultural norms in the United States and target culture. • Understands the dilemma of Melting Pot vs. Mosaic vs. Salad Bowl metaphor for the lives of people of different cultures in the United States. • Demonstrates awareness of the nature of language, understands that people learn in different ways and shows different areas of competence.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: PHYSICAL / EMOTIONAL / MENTAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands healthy and unhealthy behaviors and their impact on society, and demonstrates an ability to adapt to change (1) over time, (2) within own culture, and (3) through travel to other cultures.	• Understands concept of cultural norms in these and other areas; compares United States and target life-styles through variety of culturally authentic oral, print, non-print, electronic media, and describes culture without comparison to United States culture. • Understands that language use is a universal goal which applies to all students in the school; takes responsibility for own learning; makes decisions for own learning; deals with the consequences of personal decisions.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands written and spoken language and identifies problems and uses resources to attempt to solve them.	• Follows target patterns of thought; expresses own ideas in target. • Takes smart risks in using target in and out of class, deciding on own projects, and completing independent work. Fails on component tasks without censure, ridicule, or detriment to school record. • Participates in culturally authentic content-based classroom activities: science, math, use of technology, daily experiences. • Evaluates target and own culture through reports, artwork, and so on.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SECOND LANGUAGE

Outcome Category: SCIENTIFIC / TECHNOLOGY DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Uses information skills in/for target and applies and integrates skills from other subject areas in target.	• Initiates and completes independent projects in areas of personal competence and interest using computers, modems, faxes, video/audio tapes, camera, etc. Participates in culturally-authentic content-based activities: multi-media presentations, science lab work, mathematical concepts, vocational pursuits, work on electronic equipment, and so on. • Actively participates in hands-on group activities conducted in target which reinforce other subject areas. Searches for and shares information in culturally authentic target in a variety of oral, print, nonprint, and electronic formats.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Social Studies

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
As a result of one's social studies education, each student will be able to: • Recognize, analyze, express and defend diverse viewpoints about events, personalities, trends and beliefs that have shaped the history and culture of Colorado, the United States, and the world, in order to make decisions and solve contemporary problems OR, posed as a question: * • How have events, persons and beliefs shaped the history and culture of Colorado, the U.S., and the world? How do events and conditions in the world interrelate?	ALL GRADE LEVELS: ** Given a large outline map of some region of the world, students will graphically and artistically portray historical and geographic events significant to the development of the region included on the map. The selection of the region of the world will be appropriate to the grade level.Themes and topics to be explored will be selected by the student. Assessment criteria include: historical and geographic accuracy, importance and significance of selections depicted, artistic creativity and originality, and technical presentation. Students will peform through theatre activities, music performance, or dance/creative movement historical or geographic events significant to the development of the history or culture of the United States or world. Assessment criteria same as above. For Example: 4th Grade: • Create an artistic thematic map of Colorado. • Create an original lyric to a current pop tune (or rap music) using historical data about Colorado. • Act out a dramatic piece representative of Colorado historical events and present to peers and/or parents. * Many of the Learner Outcomes/Content Standards are given in both "statement" form and "question form." The question format reflects the work of a significant number of educators working in school districts who are using "Essential Questions" as a method of organizing curriculum. It is hoped that providing alternatives here will strengthen the notion that the samples provided are examples, and that there is no "one right answer." For that matter, neither is there "one right teaching method or approach." ** Sample demonstrations included in this document are driven by the Outcome Category, and again, numerous possibilities exist. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	8th Grade: • Create a thematic map of the United States, circa 1787, the U.S. today, or North America. • Create a portfolio of music and/or dances that depict historical perspectives through U.S. history and discuss the correlation of such materials to historical development. • Act out through dramatic activities a significant historical event or events throughout U.S. history. 12th Grade: • Create a thematic map of any region of the world. • Assess and discuss the relationship of historical events to the creation of music, theatre, dance activities. (For example, the protest music, theatre pieces, and popular dance of the 60s and 70s as a result of the Viet Nam War and political movement.)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
• Recognize a wide range of both traditional and nontraditional career opportunities; identify skills and qualifications needed to pursue such. OR, posed as a question: * • What career opportunities are available, and what are the implications and consequences of career choices, both for the individual and for society?	Demonstrate skills integral to social studies, such as: • decision-making and problem-solving skills • oral/writing skills • understanding of cooperative and teaming skills • conflict resolution skills • ability to continue personal growth options For Example: 4th Grade: • Explore career opportunities, then identify and investigate a career area of interest. 8th Grade: • Explore career opportunities, then evaluate personal skills and talents for a career area of interest. 12th Grade: • Explain career changes over time and identify what factors caused the shifts, then identify and support or reject opinions concerning jobs of the future.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
• Understand the purpose, function and structure of societal groups and one's own role within those groups in order to participate responsibly in them; understand how individuals can communicate effectively to pursue personal and societal goals. OR, posed as a question: • How can an understanding of the purpose, function, and structure of societal groups and one's role within those groups promote responsible participation in those groups? How can individuals communicate effectively to pursue personal and societal goals?	Given an issue or problem involving groups, students will devise and implement a plan to communicate, improve and resolve it, if possible. For Example: 4th Grade: • Given a school issue or problem, identify individual roles and group functions, then devise and implement a plan to communicate and if possible resolve it. 8th Grade: • Given a school or community issue or problem, identify the role and function of the diverse members of the group, then devise and implement a plan to communicate, improve or resolve it. 12th Grade: • Given a school, community, or world issue or problem, identify the groups involved, the diverse purposes and functions of each, then devise and implement a plan to communicate, improve or resolve it.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
• Understand and apply historical and social science concepts across cultures, time, and space by:*** a) applying an understanding of location, place, region, movement, and human/environment interaction to identify patterns and processes, both locally and globally OR, posed as a question: a) How can an understanding of location, place, region, movement, and human-environment interaction be used to identify local and global patterns and processes? How do people interact with the human and physical environment?	Demonstrate an understanding of how people interact with the human and physical environment. 4th Grade: • Working in groups, construct a map which shows how humans change the environment, then discuss or describe how those changes would affect their lives. 8th Grade: • Research and compare several locations and determine the most desirable place in which to live and work; produce a visual display of information and give an oral presentation explaining why that location was chosen. 12th Grade: • Working in small groups, analyze a set of study prints, photographs or topographical maps of one location taken over a period of time, then discuss observations of change over time as depicted in the visuals. Respond individually to questions involving comparisons, evaluation, and prediction concerning the changes brought about in the location and possible future changes. *** Pages 51, 73-82 include examples of Learner Outcomes/Content Standards representing the heart of the social studies. Again, the example demonstrations included herein are neither exhaustive nor comprehensive. Rather, they are suggestive of concepts from the social sciences that should be addressed in any social science program. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
b) explaining how individuals and groups create and use institutions, e.g. families, schools, churches, as well as governmental and economic systems, to meet basic needs OR, posed as a question: b) How do institutions (such as families, schools, churches) help individuals and groups meet basic needs?	Examine different institutions, the function of each, and the role of the individual. 4th Grade: • Working together, identify various groups to which the students belong and their roles within these groups. Discuss what individuals do for the group, and what the groups does for individuals. 8th Grade: • Using telephone books and historical records, identify types of groups (such as those that serve adolescents or the elderly) both today and in the past. Discuss roles and functions of each group, including women and minorities; list and analyze why individuals form groups. 12th Grade: • Analyze the types of groups that exist and explain their functions. Predict possible future groups and give reasons why these groups might form. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
c) analyzing ways that people and events in the world are connected, e.g. historically, economically, politically, geographically, socially, culturally, ecologically, ideologically, technologically OR, posed as a question: c) How are people of the world interconnected? How do patterns in history and the social sciences enable us to understand the present, and to anticipate the future?	Analyze world economic connections. 4th Grade: • Examine labels on clothes and chart where they were made. Locate the various places on a map and discuss global connections, cost of foreign labor, and use of women workers. 8th Grade: • Gather information on any multicomponent product (e.g., computers). Locate the and chart the source of all components. Discuss the interdependence of countries. 12th Grade: • Gather information on the European Community and other combined markets; and analyze the implications of these new markets on a global economy.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
d) explaining and applying, advocating and supporting fundamental concepts of freedom, responsibility, justice, equality, participation, diversity, authority. OR, posed as a question: d) Explain the meaning of the fundamental concepts of freedom, responsibility, justice, equality, participation, diversity, authority. How do these concepts work in the "real" world of school, community, state, nation, and world?	Students will demonstrate an understanding of principles underlying the Constitution by preparing for a "Mock Congressional Hearing." As per the guidelines of the National Bicentennial Program, students specialize in some aspect of the Constitution, then prepare three-four minute answers or "testimony" for each of three questions. A panel of community members serving as "judges" selects one question for the group of students. Following the prepared comments, judges ask follow-up questions which probe deeper into the students' understanding of the issues presented. This portion of the dialogue continues for six-nine minutes. (Elementary level may shorten opening segment to two-three minutes, and follow-ups to four-six minutes.) Sample questions on Responsibilities of Citizenship follow. 4th Grade: • Prepare for a mock hearing on the question, "Is voting a responsibility of citizenship? Why or why not? Why do you think so many people in the U.S. do not vote? Do you think people should be required to vote? Why or why not?" 8th Grade: • Prepare for a mock hearing on the question, "The United States has one of the lowest percentages of eligible voters who actually vote of any democratic country. Would you like to see more eligible people vote? Why or why not? Why do you think so many people in the U.S. fail to vote? Some countries fine a citizen who fails to vote. Would you favor such a law in the U.S.? Explain your position. What other strategies might help increase voter turnout?" (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SOCIAL STUDIES

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Prepare for a mock hearing on the question, "Do all citizens have a responsibility to participate in the political life of the nation? Why or why not? If citizens should participate, what forms should that participation take? Is civil disobedience ever a justified form of political participation? Explain your position." (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SOCIAL STUDIES

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
e) understanding and applying the responsibilities and rights of citizenship in order to participate as an effective and ethical citizen in a democracy. OR, posed as a question: e) How does an effective and ethical citizen participate in and support democratic institutions?	Demonstrate an understanding of basic rights as stated in the Constitution by taking an active role or position on an issue. 4th Grade: • Read and analyze the Bill of Rights. Identify one right that has been abused. Write a letter to the appropriate organization (e.g., newspaper, city council, etc.) expressing your views. 8th Grade: • Examine the Constitution and Bill of Rights. Select one area of concern for your community or region, and design a poster to communicate your concerns. 12th Grade: • Gather information on basic human rights, including American women and minorities. Analyze the constitutions of several nations and compare the basic rights in each country. Select a basic human rights issue or concern, then plan and initiate some action that will either publicize or help resolve the issue.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

SOCIAL STUDIES

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
f) analyzing, comparing, and evaluating the theoretical foundations and day-to-day realities of political, social and economic systems of the U.S. with those of other nations OR, posed as a question: f) How do the political, social, and economic systems of the U.S. compare and contrast with those of other nations? Compare the theoretical foundations as well as the practical operations of systems analyzed.	Demonstrate an understanding of the differences in economic, political and social systems. 4th Grade: • Construct a role play to demonstrate the differences between democratic and socialist or communistic political systems. Study the differences between a market and a planned economy and role play each kind of system. 8th Grade: • Identify and list the characteristics of various types of political, social and economic systems of the world. Role play life within the difference systems for males, females, minorities, and nonminorities. 12th Grade: • Create a chart of the various political, economic and social systems of the world. Explain the differences and identify at least three countries that employ these systems. Chart both the ideals and "reals" of each society, then compare systems across societies.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

SOCIAL STUDIES

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
g) explaining and/or using basic economic concepts such as: distribution of resources, scarcity, opportunity costs, trade-offs, money, supply, demand, equilibrium, circular flow OR, posed as a question: g) How and why do individuals, institutions, and societies make economic choices necessitated by scarcity—i.e., unlimited wants and limited resources? How do economic forces influence individuals, institutions, and societies? How did the development of market, command, and traditional economic systems impact history and how will they influence the future?	Demonstrate an understanding of scarcity and methods of allocating scarce resources. 4th Grade: • Allocate a scarce good and discuss the different methods that could be used and their relationships to the real world. 8th Grade: • Identify scarce resources in your community and determine how these resources are allocated. Make a book of scarce resources and their allocative mechanisms. 12th Grade: • Determine scarce resources throughout the world and analyze the methods of allocation. Design and defend a fair system of allocation.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

(Continued)

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
h) understanding that conflict is natural; explaining how conflict functions at all levels, interpersonally to globally; and evaluating alternative ways of responding to conflict OR, posed as a question: h) Why does conflict occur at various levels, from interpersonal to global? What are alternative ways to respond to conflict?	Given real-life conflict situations students will evaluate alternatives approaches to manage the conflict situation. For Example: 4th Grade: • Given a playground conflict situation, analyze various alternative strategies for solving the problem (e.g., accommodation, compromise, fighting, ___, ___). Examine the issue from various approaches and discuss how each approach is positive or negative for the participants. 8th Grade: • Examine conflict issues throughout history (cattlemen v. ranchers, abolitionists v. slave owners, North v. South, Colonies v. Britain, suffragettes v. antisuffragettes) and how they were resolved. Reexamine the outcome assuming that alternative approaches had been used. 12th Grade: • Identify and analyze global conflicts. State alternative solutions to the conflict and analyze the costs and benefits. Select and defend a strategy for resolution. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
i) identifying, analyzing, expressing, and rationally defending multiple viewpoints about current events and issues OR, posed as a question: i) How does an understanding of current issues enhance your ability to act as an informed citizen? What connections can be made between contemporary and historical issues? How can an understanding of historical and contemporary issues help to shape the future?	Identify a current important issue or concern within the school, community or world. Express and defend multiple points of view on the issue, then plan and implement a personal or group action to communicate and improve or resolve it. 4th Grade: • Identify an issue or concern, analyze various viewpoints, and develop a plan for addressing the issue or concern. Design an interpretive presentation on the issue. 8th Grade: • Identify an issue or concern, analyze and present various viewpoints of gender, racial, ethnic, and socioeconomic groups, then develop a plan for addressing the issue or concern. Design an interpretive presentation on the issue. 12th Grade: • Identify an issue or concern, identify historical events that lead to the present status, utilize information to support alternative viewpoints, develop a plan and provide a rationale for the plan, and develop criteria for evaluation the success of the plan.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SOCIAL STUDIES

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognize, analyze, express and defend diverse viewpoints about events, personalities, trends and beliefs that have shaped the history and culture of Colorado, the United States, and the world, in order to make decisions and solve contemporary problems OR, posed as a question: • How have events, persons and beliefs shaped the history and culture of Colorado, the U.S., and the world? How do events and conditions in the world interrelate? Why/how do culturally diverse groups have different perspectives on issues related to Colorado, the United States, or the world?	Given an historical issue, students will analyze and explain multiple culturaland gender perspectives, then present their findings in a poster, class newspaper, term paper or other product. Topics selected will be appropriate to student studies and grade level. For Example: 4th Grade: • Analyze and explain multiple cultural perspectives of the settlement of Colorado and the Rocky Mountain West, including women and men of African American, Asian/Pacific Islander, Hispanic, and Native American/Indian descent. 8th Grade: • Analyze immigration and settlement patterns to the United States looking at the experiences of several different cultural groups. 12th Grade: • Use history, geography, and international law to explain past, present, and future migration patterns. Contemporary refugees will serve as a case study, and analogies will be drawn to other examples in history. See also Human Relations & Responsibility and Physical & Emotional Health for other examples of social studies proficiencies and demonstrations related to Multicultural Understanding.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SOCIAL STUDIES

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Create a dynamic sense of self as an active participant, responsible for one's actions in a pluralistic and changing local, national, and global community OR, posed as a question: • How does understanding yourself enable you to participate in a pluralistic and changing society?	Given hypothetical but real-life situations such as those outlined below, students will actively participate and evaluate their effect on the situation, using some of the following skills: • seeking clarification of values, feelings, suggestions, or ideas • summarizing and restating suggestions • utilizing alternative roles in group participation • applying skills necessary for conflict resolution. For Example: 4th Grade: • Resolve a school problem, such as name-calling on the playground. Perhaps a peer who is "different" is being rejected because of those differences. Responses will indicate an understanding of the concepts of responsibility and justice. Students will: • evaluate the behavior in terms of its appropriateness in society • use conflict resolution skills to improve or resolve the situation • evaluate individual role and responsibilities. 8th Grade: • Resolve a problem involving peer pressure. Perhaps peers pressure the student to violate one's personal or family values. Students will: • recognize the discrepancy • use refusal skills to improve or resolve the situation • identify individual responsibilities and evaluate effects of resolution. (Continued)	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

SOCIAL STUDIES

Outcome Category: PHYSICAL / EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency

	12th Grade:
	• Examine public policy issues relevant to students' lives (e.g., environmental issues, interracial dating, church/state questions.) Students will:
	  • apply democratic concepts and ideals in considering alternatives
	  • suggest strategies to improve or resolve the situation and identify individual responsibilities
	  • take some action
	  • evaluate result of the action.
		(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Develop and acquire the desire to apply critical thinking and ethics skills (as appropriate) to make decisions and solve problems related to social studies content and disciplines Use cause/effect relationships, cost/benefit analysis, chronological sequencing of events, change over time, and so on, to organize and understand social studies content	Given a situation, students will: • identify the problem • identify major issues related to the situation • gather information (e.g., different viewpoints, concerns, etc.) • process information (e.g., list and analyze alternative solutions) • make a decision or solve the problem. For Example: Given a situation of conflict over land use, students will: 4th Grade: • Use an historical understanding of an issue (e.g., land use from the perspective of Native Americans v. settlers) to devise a possible solution to a related present day land-use issue. 8th Grade: • Use the understanding of cause and effect in historical situations (such as range wars) to draw analogies which promote understanding of present day issues (such as Two Forks, Rocky Flats, growth, pollution), then identify and hypothesize a solution. 12th Grade: • Use an understanding of cause/effect relationships to identify parallels between present day and possible future issues and events, then identify and apply possible alternatives. See also Human Relations & Responsibility for other examples of social studies proficiencies and demonstrations related to Reasoning / Problem Solving.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

SOCIAL STUDIES

Outcome Category: SCIENTIFIC / TECHNOLOGICAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Analyze and evaluate the economic, political and/or social impact of historical and contemporary scientific/technological changes OR, posed as a question: • What is the economic, political and/or social impact of historical and contemporary scientific/technological changes?	All Grade Levels: • Students will demonstrate an understanding of the changing environmental impact and values that are part of the daily life of an Average American Family. The actions of an environmentally UNeducated person will be contrasted with the actions of an environmentally EDucated person. Students will present their findings in a creative work using any combination of media (photographs, slides, drawings, magazine pictures, cartoons, computer graphics, video, etc.). Topics, medium, and level of complexity will differentiate grade level projects. For Example: 4th Grade: • Analyze environmental issues and produce a collage or draw cartoons which compare the actions of an environmentally conscious family's actions with those of an environmentally unconscious family. 8th Grade: • Analyze environmental issues and produce a photo-journal essay which depicts various life-styles and the resulting impact on the planet. 12th Grade: • Analyze environmental issues and produce a video or slide/tape show to document various life-styles and associated values with resulting impact on the planet. An accompanying written or oral analysis would include values associated with behaviors, and suggestions for reducing harm to the environment.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Theatre

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

THEATRE

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Expresses personal impressions related to performance and responds to the creative process while experiencing the creative product.	Responds to theatre art in an effort to interpret and enoble human experience. For Example: 4th Grade: • Relates appreciation for the sensory responses achieved by attendance at a theatre production, and writes critical responses to that production. Illustration: Attend a play then discuss the least and most favorite part of the performance and the feelings developed from such. 8th Grade: • Discovers the experience of a creative theatrical production and defines all elements that develop of a theatrical production. Illustration: Attend a play and discuss what elements of the experience create the theatrical experience. 12th Grade: • Develops a personal aesthetic criteria for the evaluation of a theatrical production, and evaluates and critiques a theatrical performance referring to all elements of production based on selected criteria and personal values. Illustration: Attend a professional theatrical production and do written evaluation of all aspects of what makes theatre enjoyable and what creates good and bad theatre.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes, understands, and assesses career possibilities in all areas of the theatre experience.	Demonstrates an understanding of theatre careers possible and discriminates the many skills and talents necessary to develop appropriate work skills and attitudes in each case. For Example: 4th Grade: • Becomes aware of the wide variety of characters and technicians needed for theatrical occupations and demonstrates the many available different jobs in the theatre through role playing. Illustration: Invite a touring children's theatre group to your school and then have a member of the cast or crew visit each class and talk about different jobs in the theatre; let kids role play, through creative drama, several aspects of theatre jobs. 8th Grade: • Understands the varieties of theatre-related jobs through available resources and becomes aware of the many theatre opportunities available in our world. Illustration: In small groups, intern with various departments of a theatre for a day, week, or month. 12th Grade: • Categorizes college and professional experiences to evaluate a wide range of career opportunities and prepares resumes, audition scenes, video tapes of auditions, portfolios, and interview techniques for theatre job opportunities. Illustration: Attend state, regional, or national theatre conventions, meet college and professional representatives, and audition and/or apply for interesting programs.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

THEATRE

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Shares values and feelings with others while planning dramatic activities, interacting in class conversations and discussions, and doing character analysis.	Examines and explains interpersonal relationships among characters and identifies conflict situations and communication potential through theatre activities. For Example: 4th Grade: • Explores the behaviors that are appropriate to the dramatic situation and shares perspectives of self with others during dramatic activities. Illustration: Do a dramatic reading of a children's theatre piece; talk about how the characters are like you and different from you. 8th Grade: • Balances personal needs with special responsibilities in dramatic activities and identifies ways to improve interpersonal relations through self-examination. Illustration: Write a play, with a group, in which all members come to consensus on a main idea, form, and in which each member of the group develops and plays a role. 12th Grade: • Becomes aware of the theatrical needs of ensemble playing in theatre and examines, controls, and expresses personal emotion as an actress/actor and as a character. Illustration: Select and produce a play, with a group, and explore the notion that a show is only successful for everyone if everyone is made to feel important and works together.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

THEATRE

Outcome Category: HUMAN RELATIONS & RESPONSIBILITIES

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Identifies and evaluates methods people use in resolving conflicts and the consequences of a character's behavior, while developing objectivity in assessing personal abilities and creative expressions.	Demonstrates human understanding through ensemble and individual performance using multi-cultural, gender, and ethnic issues and other social issues and their resolutions. For Example: 4th Grade: • Explores real life conflict situations and possible resolutions, then acts out those situations and real life conflicts and discusses possible resolutions. Illustration: Students learn role-playing techniques and problem-solving strategies at the beginning of the year; each time a human relation problem arises in the class, role-playing can be used to act out different solutions to the problem. 8th Grade: • Explores similarities and differences between real and imaginary situations in theatre and performs a theme from a play that makes a human or social comment. Illustration: Find a theme on some issue that matters to students. Research and find one-act plays with similar themes. Enact several scenes for peers and parents. 12th Grade: • Develops deeper understanding of self in relation to peers in special context, and performs a play that makes a human or social comment. Illustration: Poll students or community members and find out what social issues are most important to them. Produce a published or original play for the community along that theme.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

THEATRE

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Discovers common subjects, ideas, and stories from different cultures while recognizing that theatre reflects the artistic contributions and social values of a people as well as their accomplishments and how theatrical heritage is marked by varied and numerous forms of expression.	Demonstrates how cultural and ethnic themes communicate feelings, ideas, and perspectives and a heightened awareness of the global impact of theatre on world cultures (African-American, Asian American/Pacific Islander, Hispanic American, Native American/American Indian). For Example: 4th Grade: • Develops an awareness of multicultural concepts through dramatic activities and listens to multicultural stories, multicultural views, videos, and plays, and attends live multicultural plays. Illustration: Use story drama techniques to have children physically participate in enacting folk tales from around the world; also act out true stories. 8th Grade: • Explores historical and multicultural concepts through dramatic activities and reads and discusses plays while exploring historical and cultural backgrounds. Illustration: Take a historic event or issue from a culture other than that of the predominant class culture. Use "Living Newspaper" techniques from the 1930s to perform. Video tape them. 12th Grade: • Compares social, cultural, and political aspects of theatrical heritage and reads, views, and discusses multicultural plays and analyzes them in appropriate cultural contexts. Illustration: Read three plays from various cultures on a topic or issue. Analyze, compare, and contrast the views, styles, and formats for the pieces.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

THEATRE

Outcome Category: PHYSICAL / EMOTIONAL / MENTAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Explores character development through physical and emotional expressions, similarities, and differences within characters in plays, while acting and interacting in dramatic activities.	Demonstrates how theatre activities impact self-concepts, personal abilities, and expressions, and an understanding of self and others through a heightened comprehension of physical, emotional, and mental well-being. For Example: 4th Grade: • Develops self awareness and self-confidence in dramatic play and receives and sends verbal and nonverbal messages in group playmaking. Illustration: Explore animal, fantasy, and human characters' movements in creative drama exercises, story dramas, and children's plays. 8th Grade: • Discovers a creative self by imagining, interacting, and reflecting dramatic activities and portrays characters and emotions through stage movements. Illustration: Play Viola Spolin's "Who Games" from Improvisation for the Theatre; share characterization skills in a lunchtime cabaret improvisation performance. 12th Grade: • Understands self and others by exploring characters in plays and interprets subtleties of posture, gesture, and facial expression for distinct characterization on stage. Illustration: Keep a journal of interesting people you observe or know. Develop a character for a play based on several aspects from the journal and portray the character in a stage performance.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

THEATRE

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Analyzes problems considering cause and effect and develops intuitive, analytical, and reflective methods of problem solving for practical and artistic problems.	Demonstrates the use of theatre activities as a vital tool for deductive problem solving of real life situations in all areas of daily activities through identification, creative reasoning, and critique of solutions. For Example: 4th Grade: • Recognizes that people in stories have problems and improvises real life problems and discusses and/or acts out resolutions. Illustration: Read a story which reflects problems students have in life, but stop reading before the end. Then have students act out, in small groups, their creative ideas for the ending. 8th Grade: • Explores choices and consequences as actors, and improvises problem situations and a variety of solutions, including interactive analytical and reflective problem situation techniques. Illustration: Practice solving problems, like locating a missing prop, through the intuitive, analytic, and reflective technique. 12th Grade: • Evaluates acting and technical theatre as creative, problem-solving opportunities and explores a variety of imaginative solutions and practical problems in play production. Illustration: Produce a technically difficult play on a low budget or using only recycled materials.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

THEATRE

Outcome Category: SCIENTIFIC / TECHNOLOGY DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands and responds to elements of technical theatre, the requirements of participating on a technical crew, and the processes, techniques, tools, and materials needed to create a technical job in theatre.	Applies technical knowledge to the creation of innovative and artistic dramatic activities in all areas of theatre production using current and new technological developments. For Example: 4th Grade: • Recognizes elements used in dramatic activities, and identifies parts of a set, props, costumes, lighting effects, and sound effects. Illustration: Experiment with different ways of creating dramatic effects by playing with a variety of costumes, props, light gels, set pieces, and sound devices. 8th Grade: • Explores the effects of selecting elements of technical theatre, and participates in working on one theatre crew. Illustration: Select a one-act to produce and set it in a time period or setting that is unusual for the piece. Use technical theatre devices to get the new period or circumstance across to the audience. 12th Grade: • Collaborates in creating and executing technical theatre, and assumes the duties and responsibilities of a crew head. Illustration: Work on a full-length play by first meeting with a director and brainstorming creative solutions to technical problems, then designing and producing imaginative technical solutions in a creative synthesis of efforts.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Visual Art

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

VISUAL ART

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands design elements, vocabulary and techniques, and materials and their relationship to aesthetic responses while recognizing the significance of artists' choice in media and techniques that respond to mood and how it is communicated in a work of art by subject matter and its treatment.	Summarizes and evaluates the many possibilities available to artists to express and communicate ideas. For Example: 4th Grade: • Judges a work of art based on emotional, technical, and aesthetic qualities. Illustration: The emotions expressed in Van Gogh's "Starry Night." 8th Grade: • Identifies a variety of approaches artists have used to communicate ideas and feelings. Illustration: The differences in portraits by da Vinci, Whistler, De Kooning. 12th Grade: • Assesses and explains the degree to which media and techniques communicate content and feelings. Illustration: Warhol's choice of media and techniques in his Pop Art.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes, understands, and assesses career possibilities by becoming aware of the existence of visual arts in our world and the personal talents and skills necessary to develop interpersonal skills and appropriate work attitudes in such careers.	Demonstrates an understanding of the variety of visual arts careers possible, and the skills, talents, training, and work experience necessary to justify those careers. For Example: 4th Grade: • Defines the ways art exists in our world, and the career opportunities this provides. 8th Grade: • Evaluates personal skills and talents necessary for a career. 12th Grade: • Understands skills, talents, and training necessary for specific job opportunities.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes that artists communicate ideas and feelings through the use of visual symbols and images by using various media and techniques to communicate personal content.	Understands how artists use visual symbols, images, and themes to communicate ideas and feelings, and differentiates the relationships between visual communication and other means of communication and appreciates their similarities and differences. For Example: 4th Grade: • Understands possibilities of using visual art to communicate non-verbal ideas. Illustration: An emotion that is hard to put into words. 8th Grade: • Uses appropriate media, techniques, symbols, and images to communicate effectively in a work of art. Illustration: Chooses dark colors to express depression. 12th Grade: • Uses a sketchbook/journal to record feelings, ideas, processes, and criticizes fellow students' and professionals' works of art using appropriate terminology and methodology. Illustration: Records the initial idea in sketches and words and uses the journal entries to record the process through to completion.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes the universality of art to express emotion to all of humankind regardless of background through the understanding of the personal and interpersonal potential of all artistic formats while respecting the diversity of art as an expressive model.	Develops shared working potentials within the exhibit arena by exploring the meaning and understanding of works of art to all and recognizing that art develops relationships through feelings and ideas expressed from artist to observer. For Example: 4th Grade: • Understands through individual exhibits and through all artistic experiences. Illustration: Appreciates a new display put up by the teacher, and enjoys sharing own work. 8th Grade: • Differentiates individual and group interworkings to develop self-esteem, completion of tasks, product completion. Illustration: Works on a group mural, from idea to completion. 12th Grade: • Assesses the level of contributions of works of art to human history by relating from premise to themes. Illustration: Understands the relationship of Renaissance art to the whole society.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Recognizes and appreciates the many different contributions made to visual art by various cultures through history and values the importance of art as a recorder of the human condition.	Identifies how artists use cultural/historical themes to communicate their ideas and feelings and is able to identify the works of specific cultures (i.e., African American, Asian Ameri can, Hispanic American, and Native American) by their symbols and themes. For Example: 4th Grade: • Recognizes that each culture has specific images, symbols, and themes to express its values. Illustration: Knows the difference between Egyptian and Native American symbolism. 8th Grade: • Uses visual symbols and images to express ideas of a particular culture. Illustration: Tells a personal story using the symbols of petroglyphs. 12th Grade: • Produces artwork with meaningful themes that is set in a cultural context. Illustration: Being aware of personal heritage, uses that symbolism.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: PHYSICAL / EMOTIONAL / MENTAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Appreciates the uniqueness of each individual as evidenced by their works of art by expressing personal fantasies and imagination and recognizing the importance of visual art as an indicator of individual and group human conditions.	Uses visual art to improve self-concept and express emotions. For Example: 4th Grade: • Uses visual art to express emotions and feelings hard to express by other means. 8th Grade: • Recognizes the value of own creations as unique and valid. Appreciates personal level of talent and success. 12th Grade: • Uses and critiques a sketchbook/journal as a means of recording personal growth, expression, and progress toward goals.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Uses verbal language to describe, analyze, and appreciate own and others' works using appropriate terminology and methodology by demonstrating awareness of the steps taken to solve a specific visual problem.	Uses critical thinking skills in creating and analyzing a work of art. For Example: 4th Grade: • Defines the differences and similarities between visual and verbal languages. Illustration: Understands the similarity between rhyming in poetry and repetition in art. 8th Grade: • Understands the process of solving a problem from idea to completion. Illustration: Pottery involves: making clay, forming it, firing, glazing, and refiring. 12th Grade: • Uses a sketchbook/journal to record steps in problem solving, reasons for choices, and critique of final results.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VISUAL ART

Outcome Category: SCIENTIFIC / TECHNOLOGY DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
Understands, appreciates, and uses the interrelationships of science, math, computer, video, and visual art through artistic expression throughout movements in art history.	Applies scientific/technological knowledge to the appreciation and creation of works of art using new technology as a means of artistic expression. For Example: 4th Grade: • Summarizes the connections between math, science, and visual art. Illustration: Connects proportion in nature, architecture, and art. 8th Grade: • Understands the influences of technology on art, past and present. Illustration: Imagines the different paints available to cave dwellers and modern painters. 12th Grade: • Compares images and ideas generated from technology in creating innovative works of art. Illustration: Can use an idea from MTV as inspiration for a drawing.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Vocational Education

Aesthetic Development
Career Development
Communication
Human Relations and Responsibility
Multicultural Understanding
Physical/Emotional Health
Reasoning/Problem Solving
Scientific/Technological Development

Standards-based Education Examples

VOCATIONAL EDUCATION

Outcome Category: AESTHETIC DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Understand how an appreciation of aesthetics and creativity affect values, attributes, and various types of quality work in American society.	4th Grade: • Create a multiple-color art project according to personally-established quality standards. • Produce a poster showing the major occupations in the community. • Participate in a mini-drama showing the interactive nature of all jobs held by people in the community. • Write song lyrics discussing a specific job. 8th Grade: • Self-evaluate an art project done on personally-established quality standards. • Interview an adult regarding how the dignity of quality work can become a type of personal art form and dramatize how quality work or poor performance can be observed by the class. 12th Grade: • Shadow a person on the job, and then draw a caricature or write a song about quality assurance in that occupation. • Write a poem or dramatic roledescribing your own philosophy of excellence in the work force and present to the class. • Develop an aesthetic flow chart or a pie graph, anticipating the future growth of an occupation that is informative as well as artistic.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

VOCATIONAL EDUCATION

Outcome Category: CAREER DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Explore career opportunities from a community to a global setting.	Demonstration 4th Grade: • Write a short narrative story about a job yet to be created in the future. • Compile a list of jobs from various parts of the world that are not common in the U.S. 8th Grade: • Write a synopsis of a field trip to a selected job site. • Design a chart showing the range of employer benefits in various careers. 12th Grade: • Write out in detail a personal career development plan. • Prepare a personal resume for the occupation of one's choice	(To be developed: Excelling, Proficient, In Progress)
• Explore the characteristics of entrepreneurship.	4th Grade: • Create the perfect job description that maximizes the use of your best talents. 8th Grade: • Write an essay entitled "In Pursuit of the Self-Made Man/Woman." 12th Grade: • Deliver a speech on the advantages and disadvantages of being self-employed as opposed to working for others.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

VOCATIONAL EDUCATION

Outcome Category: COMMUNICATION

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Explore the relationship of effective communication in the world of work.	4th Grade: • Role play certain messages given to co-workers through nonverbal communication. • List the five senses, and define the basic function of each in a job setting. 8th Grade: • Using pictures from magazines, create a collage showing various messages through "body language." • Write a memo giving sample directions to a member of your staff in the most effective way possible. 12th Grade: • Write a hypothetical "end of the year" report for the company over which you are chief executive officer. • Role play scenarios that contrast effective and ineffective communication strategies on the job.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

VOCATIONAL EDUCATION

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Explore the ethics of social responsibility in a group employment setting.	4th Grade: • Participate in the class development of a "Good Employee/Employer Handbook." • List a variety of personal decisions that may affect job retention. 8th Grade: • Create a chart comparing the school's dress and hygiene standards with those in the average workplace. • Make a list of ethical issues which commonly affect employment such as integrity, grooming, attitude, gender and racial equity, etc., and give examples of inappropriate behaviors in these areas. 12th Grade: • Participate in a debate on environmental vs. economic development issues, being prepared to defend one or the other.	(To be developed: Excelling, Proficient, In Progress)
• Understand how to promote effective working relationships with individual co-workers.	• Assess own leadership style using an established instrument. 4th Grade: • Model active listening skills with another student over issues in the work/school environment, such as space, climate, social atmosphere, etc. 8th Grade: • In collaboration with another student, write out a proposed solution to an unresolved classroom problem that would also be common in the workplace. (Continued)	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VOCATIONAL EDUCATION

Outcome Category: HUMAN RELATIONS & RESPONSIBILITY

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
	12th Grade: • Participate in the classroom development of a logical system of conflict resolution that could be used in any social setting, , and then role play a conflict scenario resolved by this new system.	(To be developed: Excelling, Proficient, In Progress)

COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VOCATIONAL EDUCATION

Outcome Category: MULTICULTURAL UNDERSTANDING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Appreciate economic and occupational differences in the heritage, beliefs, and skills of other cultures.	4th Grade: • Compile a list of myths attached to the productivity and life-styles of America's various ethnic groups, Black, Hispanic, Oriental, Native American, etc. • Attempt to manipulate job-related devices common to other cultures, such as the abacus, boomerang, lasso, etc. 8th Grade: • Host and participate in a multicultural career day at your school. • Write a treatise examining the stereotypes that exist in various occupational fields, such as accounts, professional athletes, secretaries, housewives, chief executive officers, etc. 12th Grade: • Compose a narrative contrasting a primitive culture with an advanced one as to what occupations are held in highest esteem.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VOCATIONAL EDUCATION

Outcome Category: PHYSICAL & EMOTIONAL HEALTH

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Develop the physical and emotional attributes necessary for a successful career.	4th Grade: • List in one column occupations that require a high degree of prowess and stamina, and in another occupations that require a high degree of mental toughness. • Participate in a sport of choice that offers the most in personal relaxation or revitalization. 8th Grade: • Create a hypothetical daily schedule that exhibits a proper balance of work, play, and relaxation. • Write a personal analysis of a self-improvement theory that meets the needs of the total individual. 12th Grade: • Design a health promotion plan for self and family. • Interview an employer regarding the impact of physical and emotional health on productivity.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

VOCATIONAL EDUCATION

Outcome Category: REASONING / PROBLEM SOLVING

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Acquire the critical thinking skills necessary to solve problems and make decisions pertaining to the world of work.	4th Grade: • Write a description of the various categories of cartoon characters for sale in toy departments. • List in rank order the relative value of the various free items found in breakfast cereal boxes. 8th Grade: • Read a newspaper article about the success or failure of a particular business, and write an analysis of the causes of its success or failure. • Compile salary figures for major league athletes, prepare a graph showing dollar distributions among rookies and veterans, and critique findings according to equity and propriety. 12th Grade: • Review advertisements in the media, and compile a list of biases and deceptive practices found in them. • Design a hypothetical organizational flow chart for a major corporation that epitomizes efficiency and maximizes productivity.	(To be developed: Excelling, Proficient, In Progress)

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Standards-based Education Examples

VOCATIONAL EDUCATION

Outcome Category: SCIENTIFIC / TECHNOLOGICAL DEVELOPMENT

Learner Outcomes/Content Standards	Assessment Demonstrations	Evaluation Standards and Levels of Proficiency
To be well prepared in the area of vocational/technical education, each student will: • Understand the application of science/ technology in the world of work.	4th Grade: • List a variety of technological tools found at home, school, and work, and identify the various tasks they can perform. 8th Grade: • Display the ability to use the word processing, spread sheet, and data base functions of a popular computer program. • Exhibit the fine motor skills necessary for proper keyboarding. 12th Grade: • Using the Dictionary of Occupational Titles, list various technological occupations and the type of machines they employ. • Formulate a simulated experiment involving technology monitors, determining what will be monitored	(To be developed: Excelling, Proficient, In Progress)
• Explore the relationship of math and science technologies fromlocal businesses to international corporations	4th Grade: • Diagram how the various powers of ten are used in computer operation. 8th Grade: • Role play worldwide conference call of an international business, simulating an agenda carried out by executives in different countries. 12th Grade: • Hypothesize either the sudden loss or the total takeover of technology, and write a short story of the world in such a state.	

cde
COLORADO DEPARTMENT OF EDUCATION
STATE OFFICE BUILDING
201 E. COLFAX
DENVER, COLORADO 80203
December 1991

Acknowledgments

The School Effectiveness Unit of the Colorado Department of Education gratefully acknowledges the thoughtful assistance of the following:

General Assistance
Lois Adams, Mild-Moderate Needs, Colorado Department of Education
Elaine Andrus, Carnegie Project Coordinator, Colorado Department of Education
Patricia Burger, Public Information
Marta Cruz-Janzen, Race/Sex Equity Technical Assistance, Colorado Department of Education
Jan Perry Evenstad, Race/Sex Equity Technical Assistance, Colorado Department of Education
Richard Hulsart, HIV/AIDS, Comprehensive Health, Colorado Department of Education
Robi Kronberg, Severe/Profound Needs, Colorado Department of Education
Frank Rainey, Gifted and Talented, Colorado Department of Education
Jeanette Ray-Goins, Supervisor, Race/Sex Equity Technical Assistance, Colorado Department of Education
James Scamman, Region 2 Field Representative, Colorado Department of Education
Vicente Z. Serrano, Race/Sex Equity Technical Assistance, Colorado Department of Education
The Executive Committee of the Colorado Language Arts Society
Colorado English Supervisors and Coordinators
Board of Directors of the Colorado Council of Teachers of Mathematics
Colorado Social Studies Supervisors and Coordinators

Dance
Joan Brown, Teacher, Denver Public Schools

Education Technology
Pat McCartney, Technology Consultant, Colorado Department of Education
Lynda Welborn, School Media Consultant, Colorado Department of Education

English/Language Arts
Judith C. Gilbert, Senior Consultant, English/Language Arts, Colorado Department of Education
Paul Bellin, Humanities Coordinator, Weld County School District 6, Greeley
Ann Foster, Instructional Services Executive Director, Poudre R-1 Schools, Fort Collins
Dianne Harper, Teacher, Yuma Public Schools
Ann Kane, Teacher, Elementary Alternative School, Boulder Valley Schools
Kathy Bellin, Teacher, Cherry Creek Schools; President, Colorado Language Arts Society
Fred Quinonez, Teacher, Brighton Public Schools
Nora Redding, Curriculum Coordinator, Aurora Public Schools
Colleen Sawyer, Teacher, Adams County District 12
Teachers representing school districts in the San Juan BOCS
English Department Chairs, Jefferson County Schools
Colorado Language Arts Society - Executive Committee
The English Coalition Report
ASCD recommendations regarding curriculum development

Health Education
Suzanne Crouch, Supervisor, Jefferson County Schools, Golden
Susan Evans, Teacher, Boulder Valley Schools
Mary Lou Myers, Health Consultant, Colorado Department of Education
Cheryl Norton, Professor, Metroplitan State College, Denver
Susan Schafer, Director, School Effectiveness Unit, Colorado Department of Education

Mathematics
Mattye Pollard-Cole, Senior Consultant, Mathematics, Colorado Department of Education
Patty Bell, Elementary Teacher, Poudre School District R-1
Fran Berry, Mathematics Teacher, Jefferson County Schools
Larry Bradsby, Mathematics Supervisor, Jefferson County Schools
Glenn Bruckhart, Mathematics Teacher, Littleton School District 6
Cooper Burgie, Principal, Elizabeth School District C-1
Bruce Camblin, Mathematics Teacher-on-Special-Assignment, Greeley School District 6
Jean Cutshall, Mathematics Teacher, Adams-Arapahoe School District 28J
Leslie Goetzfried-Anderton, Curriculum Specialist, Adams County Five-Star Schools
David Hunt, Mathematics Teacher, Mesa County Valley School District 51
Janet Iona, Elementary Mathematics and Science Curriculum Specialist, Adams County Five-Star Schools
Jean Klanica, Mathematics Teacher and Department Chair, Cherry Creek Schools
Don McGinnis, Mathematics Teacher-on-Special-Assignment, Thompson School District R-2J
Sharon Simpson, Assistant Principal, Cherry Creek Schools
Sheri Stephens-Carter, Mathematics Supervisor, St. Vrain Valley School District Re-1J
Don Watson, Student Assessment/NAEP, Colorado Department of Education
Art Wilson, Mathematics Supervisor, Denver Public Schools
Barbara Wright, Mathematics Teacher, Cherry Creek Schools
Colorado Council of Teachers of Mathematics - Board of Directors
Colorado Council of Supervisors of Mathematics

Music
Charles J. Cassio, Fine Arts Consultant, Colorado Department of Education

Physical Education
Suzanne Crouch, Supervisor, Jefferson County Schools
Susan Evans, Teacher, Boulder Valley Schools
Mary Lou Myers, Health Consultant, Colorado Department of Education
Cheryl Norton, Professor, Metroplitan State College
Susan Schafer, Director, School Effectiveness Unit, Colorado Department of Education

Science
Mary Gromko, Science Consultant, Colorado Department of Education
Robert Barto, Mitchell High School, Colorado Springs District 11
Cad Dennehy, Greeley Public Schools 6
Diana Doepken, Air Academy School, Academy School District 20
Barbara Elliott, Ray Kilmer Elementary School, Louis Palmer School District #38, Monument
Mike Fitzgerald, Ute Meadows Elementary, Jefferson County Schools R-1
Bruce Hogue, Dunston Middle School, Jefferson County Schools
Glen McGlathery, University of Colorado at Denver
Anne Tweed, Eaglecrest School, Cherry Creek Schools 5
Lynn Von Huben, Hughes Biological Scienc Education Initiative, University of Colorado

Second Language
Mary Apodaca, Second Language/Re:Learning Consultant, Colorado Department of Education

Social Studies
Ginny Jones, Social Studies Specialist, Colorado Department of Education
Mary Alice Campbell, Associate Director, Colorado Council for Economic Education
Phyllis Clarke Bye, Teacher, Boulder Valley Schools
Loyal Darr, Social Studies Coordinator, Denver Public Schools
Dale Greenawald, Methods Professor, University of Northern Colorado
Nancy Hurianek, Social Studies Coordinator, St. Vrain Public Schools
Brian Loney, Social Studies Coordinator, Jefferson County School District
Barbara Miller, Senior Staff Associate, Social Science Education Consortium
Jane Pollock, Curriculum Specialist, Aurora Public Schools
Bev Robin, Social Studies TOSA, Cherry Creek Schools
Kaye Siemers, Social Studies TOSA, Cherry Creek Schools

Theatre
Michele Busti, Teacher, Cherry Creek Schools
Robin Snover, Denver

Visual Art
Barbara Hirokawa, Teacher, Jefferson County Schools

Vocational Education
Kenneth Poppe, Restructuring Consultant, Colorado Department of Education
Donna Brookhart, Vocational Teacher Educator, School of Occupational and Educational Studies, Colorado State University
Diane Hegeman, Vocational Technical Educational Manager, Colorado Community College and Occupational Education System
Richard Hulsart, High Risk Intervention Unit, Colorado Department of Education
Pat McGuire, Vocational Teacher Educator, School of Occupational and Educational Studies, Colorado State University